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DISEASES CAUSED BY BACTERIA AND FUNGI

RICHOU, R., GERBEAUX, C., JACQUET, J. & JULIENNE, P. (1952). Rapport entre l'immunité antistaphylococcique d'origine naturelle et l'infection de la mamelle chez les femelles bovinés. **[Natural acquired immunity in staphylococcal mastitis.]**—*C.R. Soc. Biol., Paris.* **146,** 636-638. **1111**

Only occasionally can a correlation be found between the *in vitro* toxin production of staphylococci from the udder of cows and the antitoxin titre of the animals' serum.—A. MAYR-HARTING.

RAMON, G., RICHOU, R., JULIENNE, P., JACQUET, J., GERBEAUX, C. & LENEVEU, G. (1952). De l'influence des suspensions de streptocoques et de staphylocoques tués (anavaccin) sur l'immunité engendrée, chez les bovidés, par l'anatoxine staphylococcique. **[The effect on immunity in cattle of the addition of killed streptococci and staphylococci to staphylococcus toxoid.]**—*Bull. Off. int. Epiz.* **37,** 514-529. **1112**

A total of 175 cows were given 4 inoculations at 5-day intervals of staphylococcus toxoid with or without the addition of a culture of *Streptococcus agalactiae* and udder staphylococci killed by heat or formalin. As judged by the level of staphylococcal serum antitoxin, the inclusion of the killed cultures resulted in a higher level of immunity and this method of treatment is recommended for cases of staphylococcal mastitis which do not respond to antibiotics.—E. G. WHITE.

HUGHES, D. L. (1953). **Experiments on methods to control the spread of *Streptococcus agalactiae* in a dairy herd.**—*Vet. Rec.* **65,** 1-11. [Abst. from author's summary.] **1113**

An account of experiments to compare the spread of *Str. agalactiae* under different conditions of milking. Observations made in a herd in which it was possible to start each experimental period with only one cow as the source of infection demonstrated the importance of careful washing of the udder and the hygienic use of milking equipment.

Critical experiments to determine which particular factors were important in spreading *Str. agalactiae* demonstrated clearly that careless washing of the udder, particularly the omission of hypochlorite disinfectant in the washing water, was the most important factor. Sterilization of the teat cups between the milking of cows was less important.

TUCKER, E. W. (1951). **Does pen stabling reduce the incidence of mastitis?**—*N.Y. St. Ass. Milk Sanitarians 25th. Ann. Rep.* pp. 9-13. **1114**

Surveys on 27 pen stabled herds indicated that housing methods are less important in reducing mastitis than is general improvement of dairy husbandry.—L. M. JONES.

I. GUNNING, O. V. (1952). **Joint-ill (pyosepticaemia) in a hackney foal due to a haemolytic streptococcus and its treatment with penicillin and sulphamezathine.**—*Brit. vet. J.* **108,** 107-109. **1115**

II. GUNNING, O. V. (1952). **An atypical case of pyosepticaemia in a foal which revealed a haemolytic (group C) streptococcal infection.** —*Ibid.* 109-111. **1116**

I & II. A record of two cases; one, a 3-week-old foal, recovered with penicillin treatment (at first s/c, later into the affected joints); the second, a 5-week-old foal, died in spite of treatment with sulphanilamide and autogenous vaccine.—E. G. WHITE.

JANSEN, J. & VAN DORSSEN, C. A. (1951). Meningo-encephalitis bij varkens door streptococcen. **[Meningo-encephalitis in pigs caused**

NOTE.—*The* V.B. *references given in square brackets now refer to abstract numbers and not to page numbers.*

by streptococci.]—*Tijdschr. Diergeneesk.* **76,** 815-832. [English summary.] **1117**

This is a report of a detailed bacteriological study of outbreaks of meningo-encephalitis in young pigs from which haemolytic streptococci were isolated. Their identity and cultural characters were studied and discussed. The isolated strains were able to reproduce the disease in susceptible pigs.—J. EDWARDS.

SPECK, R. S. & JAWETZ, E. (1952). **Antibiotic synergism and antagonism in a subacute experimental streptococcus infection in mice.**—*Amer. J. med. Sci.* **223,** 280-285. **1118**

Synergism between penicillin and streptomycin or bacitracin, and antagonism to penicillin action by either chloramphenicol or terramycin were demonstrated in subacute *Str. pyogenes* infection in mice.—L. M. JONES.

SIMEONE, D. H. (1949). Estudio bacteriologico de enterococos de origen bovino. [**A study of strains of "enterococci" from cattle.**]—*Rev. Med. vet., B. Aires.* **31,** 166-179. **1119**

Of 75 strains of "enterococci" isolated from the faeces of healthy cattle, 54 were identified as *Str. faecalis,* and 21 as *Str. liquefaciens.* Neither of the two haemolytic members of the "enterococcus" group, viz. *Str. durans* and *Str. zymogenes,* was found. S. commented on the sanitary significance regarding milk of the failure to find these haemolytic organisms in the faeces of healthy cattle.—G. P. MARSHALL.

LAWSON, J. R. & MACKINNON, D. J. (1952). *Vibrio foetus* **infection in cattle.**—*Vet. Rec.* **64,** 763-773. Discussion pp. 773-777. **1120**

A general account of *V. fetus* infection in cattle. 90 heifers and 3 bulls were used in a controlled experiment which proved that the condition is essentially venereal, that it causes infertility and that the vaginal mucus agglutination test is the method of choice for diagnosis.

—IAN NEWSAM.

HANSEN, P. A., PRICE, K. E. & CLEMENTS, M. F. (1952). **Suitable thioglycolate media for the cultivation of** *Vibrio fetus.*—*J. Bact.* **64,** 772. **1121**

Details of a medium for the primary isolation of *V. fetus*: advocated also for culture maintenance and antigen production.

—IAN NEWSAM.

SOEKAWA, M. (1951). [**Comparison of the phenomenon of agglutination of vibrios with agglomeration of trypanosomes.**]—*Jap. J. vet. Sci.* **13,** 25-43. [In Japanese. English summary.] **1122**

Eighteen-hour culture of *Vibrio denekei* (syn. for *V. tyrogenes*), was mixed on a slide with a drop of immune serum from rabbits, the slide being dried in an incubator after slight agitation, fixed with methanol and Giemsa stained. In 9 photomicrographs which were reproduced a rosette like arrangement of the agglutinated bacteria was demonstrable. When placed on water spread out on a slide and stained by silver impregnation, a photomicrograph revealed that the flagella radiated outwards. S. concluded that a similar rosette to that seen in trypanosome agglomeration is formed in bacterial agglutination. Agglomeration of trypanosomes should therefore be included in the same category as bacterial agglutination. Such a phenomenon as agglomeration of trypanosomes is comparable to a weak O-agglutination of living monotrichous bacteria in bacterial agglutinations.—KOGI SAITO.

MINETT, F. C. (1951). **The use of climatological data for assessing the regional distribution of anthrax in India.**—*Bull. Off. int. Epiz.* **35,** 266-295. [In English.] **1123**

Certain known combinations of temperature and humidity favour the sporulation and spread of anthrax. Using climatological data M. showed where and when such favourable combinations are found in India, and produced maps showing the danger areas month by month.

—T. LEACH.

HEICKEN, K. (1952). Untersuchungen zur Bekämpfung des gewerblichen Milzbrandes. VII. Die Wirkung von aliphatischen Carbonsäuren und von Rhodanwasserstoffsäure auf Milzbrandsporen. [**Control of industrial anthrax. VII. Effect of aliphatic carbonic acid and thiocyanic acid compounds on anthrax spores.**]—*Z. Hyg. InfektKr.* **135,** 307-329. **1124**

Sporicidal action of aliphatic monocarbonic acids increases, that of dicarbonic acids decreases, with the length of the carbon chain. Tribasic and oxycarbonic acids are feebly sporicidal. The introduction of halogen increases the sporicidal action of fatty acids, depending upon its position in the acid molecule: in the α position markedly, in the β position feebly. The sporicidal action of thiocyanic acids varies with the temperature.

—W. R. BETT.

SCHMID, G., SCHMID, H. R. & BIRN, C. (1952). Über die differenzierte Diagnose der Tuberkulose des Rindes mit Hilfe der Hämagglutination nach Middlebrook und Dubos. [**Differential diagnosis of TB. in cattle by the Middlebrook and Dubos haemagglutination reac-**

tion.]—*Schweiz. Arch. Tierheilk.* **94**, 794-806. [English, French and Italian summaries. Abst. from English summary.] **1125**

In reacting cattle the haemagglutination (H.A.) titre increases in direct proportion with the extent of the tuberculous lesions; a titre of more than 1:40 indicates an animal that will after a short time become uneconomic.

The antigen/antibody basis of the test seems to differ from that of the intracutaneous tuberculin reaction, as evidenced by two heifers which after repeated testing ceased to react though their H.A. titre remained constant.

ELEK, S. D. (1952). **The serodiagnosis of tuberculosis.**—*Proc. R. Soc. Med.* **45**, 478-480. **1126**

The Middlebrook-Dubos haemagglutination test is considered to be of little practical value in the serological diagnosis of TB. in human beings. E. discussed results obtained by other workers.—A. B. PATERSON.

PÉRÈS, GE. & PÉRÈS, GA. (1950). Essais de B.C.G. diagnostic sur les bovidés. [**B.C.G. diagnosis of tuberculosis in cattle.**]—*Bull. Soc. Sci. vét. Lyon.* **52**, 170-177. **1127**

Intradermal inoculation of B.C.G. vaccine into the caudal fold compares well with the tuberculin test for diagnosis, or for demonstration of conversion, *i.e.*, demonstration that vaccination has "taken", by a positive reaction in an animal that has been vaccinated with B.C.G.

—A. B. PATERSON.

ENRICO, L. (1952). Variazioni dell'allergia tubercolinica nei traumatizzati. [**Influence of traumatism on the tuberculin reaction in man.**]—*G. Batt. Immun.* **44**, 411-423. [English, French and German summaries.] **1128**

Tuberculin tests were made on hospital patients suffering from shock following accidents. Their reactions while in the state of shock were either negative or weakly positive, though all were strongly positive when tested during convalescence.—A.S.

KERRUISH, D. W. (1952). **Tuberculosis (attested herds) scheme.** [The Veterinary Officer's report.]—*Manx J. Agric.* **7**, 37-42. **1129**

Between Dec. 1951 and March 1952 Attested and Supervised herds in the Isle of Man increased by 40 to 370. No breakdowns occurred. There was a decrease in the number of clin. and abattoir cases of T.B.

—C. C. BANNATYNE.

SAXER, E. (1952). Weitere Untersuchungen über die tuberkulöse Reinfektion beim Rind und ihren Einfluss auf die Resistenz. [**Immunity conferred on cattle by re-infection with TB.**]—*Schweiz. Arch. Tierheilk.* **94**, 741-760. [English, French and Italian summaries.] **1130**

S. described the development in cattle of a primary TB. complex following inoculation with a strain of tubercle bacillus labelled P, and their subsequent resistance to virulent infection. Eleven cattle, 4 of which were controls, were used and the period of observation lasted 2-4½ years.—ROY MACK.

ZIEGLER, M. (1952). Bemerkung zu der Mitteilung von A. Meyn: "Zur Frage der Ausscheidung von Tuberkelbakterien durch das klinisch unveränderte Euter tuberkulöser Kühe". [**Criticism of A. Meyn's paper "Excretion of tubercle bacilli by infected cows with clinically healthy udders".**]—*Mh. prakt. Tierheilk.* **4**, 527-528. **1131**

Z. criticized Meyn's claim that he had found tubercle bacilli in milk from infected cows with clinically healthy udders.

He quoted and agreed with Kästli's observation that tubercle bacilli occur in the milk only when infection has reached the udder, and discussed clinical diagnosis of TB. mastitis.

—A.S.

MORETTI, B. & PEDINI, B. (1952). Primi rilievi sul trattamento, con idrazide dell'acido isonicotinico, di forme acute di tubercolosi bovina. [**Treatment of acute bovine TB. with isonicotinic acid hydrazide.**]—*Nuova Vet.* **28**, 345-351 & 390-396. **1132**

Intramuscular injections of isoniazid given in a dosage of 4 mg./kg./day to two cows with acute TB. for 57 and 37 days respectively, produced considerable clin. improvement and gain in weight.—G. P. MARSHALL.

GWATKIN, R. & MITCHELL, C. A. (1952). **Avian tuberculosis infection in swine.**—*Canad. J. comp. Med.* **16**, 345-347. **1133**

Pigs were infected by feeding them organs of infected fowls. Healthy pigs placed with these animals 2 weeks after the last feeding also became infected. The first pigs had lesions in the mesenteric lymph nodes, the others had lesions in the mesenteric or submaxillary lymph nodes. Infection was confirmed by microscopic examination and animal inoculation.

—P. J. G. PLUMMER.

KURTZE, H. (1952). Beobachtungen über Infektionsweg und Infektionsursache bei tuberkulösen Schweinen. [**Observations on the route and source of infection in tuberculous pigs.**]—*Lebensmitteltierarzt.* **3**, 23-24. **1134**

A general discussion on conventional lines about TB. in pigs.—E. G. WHITE.

GOULDING, R. & ROBSON, J. M. (1952). **Isoniazid in the control of experimental corneal tuberculosis.**—*Lancet.* **263,** 849-853. [Abst. from authors' summary.] **1135**

The authors described methods for inducing experimental corneal TB. in mice and rabbits and gave an account of the normal course of the disease in these animals. The way in which the disease is modified by treatment reflects the antituberculous properties of the drugs employed, there being a parallel in this respect between experimental findings and clin. experience.

In mice, isoniazid alone had a suppressive effect on the tuberculous infection only while it continued to be administered. Combined with P.A.S. it was only slightly more effective. When, however, the isoniazid was given together with streptomycin, the control of the disease, though not complete, was more successful.

In rabbits, isoniazid alone had a greater suppressive action than streptomycin.

In vivo studies with isoniazid-resistant organisms were also reported.

KARLSON, A. G. & FELDMAN, W. H. (1952). **Isoniazid in experimental tuberculosis of guinea pigs infected with tubercle bacilli resistant to streptomycin and to para-aminosalicylic acid.**—*Amer. Rev. Tuberc.* **66,** 477-485. [French and Spanish summaries.] **1136**

Progressive TB. in g. pigs, caused by a streptomycin and P.A.S. resistant human-type tubercle bacillus, successfully responded to treatment by isoniazid. P.M. examination revealed an absence of active lesions.

—A. H. LINTON.

MACKANESS, G. B. (1952). **The action of drugs on intracellular tubercle bacilli.**—*J. Path. Bact.* **64,** 429-446. [Author's summary modified.] **1137**

A description of a technique whereby macrophages collected from the peritoneal cavity of the rabbit can be kept alive *in vitro* for 10–21 days. The cells ingest *M. tuberculosis,* and the effects of drugs on the intracellular organisms can be observed.

Streptomycin hydrochloride at a conc. of 10 μg./ml. in the culture medium completely inhibited growth of a bovine type strain of tubercle bacillus (Branch) but 25 μg./ml. were needed to inhibit the growth of a human type strain (H37Rv). Terramycin, neomycin B and viomycin were bacteriostatic for intracellular bacilli at conc. of 12·5, 25 and 100 μg./ml. respectively. Penicillin at conc. of 31–1000 μg./ml. appeared to stimulate rather than inhibit growth.

Bacilli the growth of which was inhibited remained unaltered in appearance for 6 days; thereafter they began to stain poorly and to become smaller, though digestion by the cells was not complete in 11 days. It was not possible to determine at what stage viability was lost.

FOURIE, P. J. J. (1952). **Tuberculosis in man, an animal health problem.**—*Onderstepoort J. vet. Res.* **25,** No. 3. pp. 7-37. **1138**

After 9 years of freedom from TB., except for one reactor, ten reactors were found in 1949 in the Onderstepoort herd of 224 cattle. It was suggested that infection, with macroscopic lesions, in 6 of 7 reactors in one group had originated from an attendant with open pulmonary TB. caused by the bovine type of bacillus, but no such person was detected. Three no-lesion reactors were considered to have acquired sensitization from an attendant with open pulmonary TB. caused by the human type of bacillus: an attendant was found to have pulmonary TB. on radiological examination, but tubercle bacilli were not demonstrated in films of sputum or on biological test. The conclusion that the infections originated from human cases is based mainly on the difficulty of finding any other possible source.

—E. G. WHITE.

VAN DEINSE, F. (1952). A propos de la vaccination antituberculeuse par le B.C.G., chez les bovins. **[Use of B.C.G. vaccine in cattle.]**—*Rev. Méd. vét., Lyon et Toulouse.* **103,** 17-32. **1139**

This article was inspired by the doubts cast on B.C.G. vaccine by Ramon [*V.B.* **22,** 3599]. Adverse criticisms were systematically dealt with and answered. Statistics and résumés of other work were quoted in defence of B.C.G. as a vaccine.—G. V. LAUGIER.

PANGBORN, M. C. (1952). **Tuberculin.**—*Ann. Rep. Div. Lab. Res., N.Y. St. Dep. Hlth,* 1951. p. 15. **1140**

P. advocated Seitz-filtering rather than heat-killing of cultures of tubercle bacilli in the preparation of "purified" tuberculin. It is suggested that the tuberculin proteins may be separated from a crude concentrate of the filtrate by the varying solubilities of their zinc compounds in alcohol-water mixtures.

—A. H. LINTON.

MESSIERI, A (1952). Sul granuloma di Roeckl. Osservazione clinica ricerche sperimentali e terapia con l'idrazide dell'acido isonicotinico. **[Roeckl's granuloma (in cattle). Treatment**

with isonicotinic acid hydrazide.]—*Nuova Vet.* **28,** 284-286. **1141**

Intramuscular injections of isoniazid for 32 days at a daily rate of 4–7·5 mg./kg. produced complete regression of the lesions of Roeckl's granuloma in a young steer. Tuberculin tests had originally been strongly positive and remained so 53 days after the end of the treatment. Autopsy revealed no macroscopically detectable tuberculous lesions.

—G. P. MARSHALL.

GLOVER, R. E. (1952). **Acid-fast bacilli cultivation and diagnostic procedures.**—*Proc. R. Soc. Med.* **45,** 475-478. **1142**

G. discussed the use of an ammonium succinate - succinic acid medium containing "liquoid" (sodium polyanetholsulphonate) precipitated serum for the growth of *M. johnei.* He found sodium hydroxide to be the most effective agent for elimination of contaminating organisms previous to culture, and simple egg media to be more satisfactory for isolation than those containing dyes or various extracts.

—A. B. PATERSON.

COULM, N. (1951). Intradermo-réaction à la tuberculine bovine chez les bovidés atteints de la maladie de Johne. [**Intradermal tuberculin reaction in cattle infected with Johne's disease.**]—*Thesis, Alfort.* pp. 48. **1143**

C. described observations on five advanced cases of Johne's disease, free from TB.; four reacted positively to intradermal inj. of both bovine and avian types of tuberculin.—A.S.

HOFLUND, S. (1948). Något om differentialdiagnosen vid vissa akuta mastiter och deras behandling. [**Differential diagnosis and treatment of certain acute forms of mastitis.**]—*Svensk VetTidskr.* **53,** 193-201. **1144**

H. discussed acute types of mastitis caused by *Corynebacterium pyogenes,* streptococci, staphylococci and *Bact. coli.* In the latter type diarrhoea may precede or follow the outbreak of the acute mastitis. The secretion is typical; the first drawn milk contains thick floccules which break into a meal-like consistency on shaking, as compared with the tough floccules in streptococcal mastitis, the remaining secretion being clear, yellow and serum-like. Bacteriological examination is negative after the first 24 hours. He described two types (a) paretic, with normal body temp., responding to calcium injection: the route of infection may be oral; (b) with a high temperature and no paresis: the toxic effect may result from a galactogenic mastitis. Cows with this type become almost dry even in healthy quarters.

—H. BOYD.

BARR, M., GLENNY, A. T., HIGNETT, S., RANDALL, K. J. & THOMSON, A. (1952). **Antigenic efficiency of fluid and precipitated diphtheria prophylactics, in very young babies and lambs.**—*Lancet.* **263,** 803-805. [Authors' summary modified.] **1145**

Diphtheria antitoxic titres of the same order were produced in babies by 2 inj., each 25 Lf (limit for flocculation), of alum-precipitated toxoid (A.P.T.) given at an interval of about 2 months, whether the first injection was given when babies were aged 6–10 days or 6 weeks or more. Babies given a first inj. of purified toxoid at the age of 6–10 days, and 2 other similar inj. at monthly intervals thereafter, developed poor immunity. Better results were obtained in a very few babies given the first inj. of 3 at the age of 7 months.

Two doses of 1 Lf of purified toxoid given at an interval of 4 weeks produced similar titres in g. pigs to those following 2 inj. of 1 Lf of A.P.T. The scatter of titres after inj. of toxoid was, however, considerably greater.

Sheep injected with 250 Lf doses of A.P.T. produced higher antitoxic titres than new-born lambs 28 days after injection. This result was also obtained 10 days after a second similar injection. After 3 inj. of purified toxoid given at monthly intervals new-born lambs tended to have higher antitoxic titres than sheep, but the antitoxin titres were widely scattered.

PALYUSIK, M. (1952). Über die Brauchbarkeit der intradermalen Malleinprobe zur Erkennung der Rotzinfektion. [**The intradermal mallein test in diagnosis for glanders.**]—*Acta vet. hung.* **2,** 235-249. [In German. Russian summary.] **1146**

P. found an intradermal test in the neck region for glanders superior both to the ophthalmic test and to the intradermo-palpebral test.—A.S.

RAFYI, A. & MIR CHAMSY, H. (1952). Remplacement de la malléine classique par un hydrolysat pepsique de Mycobacterium mallei. (Action comparable des hydrolysats pepsiques de M. pseudo-mallei et de Pseudomonas pyocyanea). [**Comparable action of peptic hydrolysates of *Pf. whitmori* and *Pseudomonas pyocyanea.***—*Bull. Off. int. Epiz.* **37,** 546-549. **1147**

Using the intrapalpebral test in 6 groups of 20 horses it was found that a peptic digest of *Pf. mallei* could be used instead of mallein.

Peptic digests of *Pf. whitmori* or *Pseudomonas pyocyanea* were as effective as mallein.

—E. G. WHITE.

SZEUT IVÁNYI, T. (1952). Die Typen des Rotlaufstäbchens und ihre Verbreitung in Ungarn. **[Types of *Erysipelothrix rhusiopathiae* and their incidence in Hungary.]**—*Acta vet. hung.* **2,** 109-120. [In German. Russian summary.] **1148**

Of 505 Hungarian strains of *E. rhusiopathiae* all except four could be placed in the 'A' or 'B' groups proposed by Dedié: the 4 exceptions were laboratory strains which had not been freshly isolated like the rest. For some unknown reason 'A' and 'B' groups are rarely found together in the same districts in Hungary.

—A.S.

FORTNER, J. & WELLMANN, G. (1952). Auf dem Wege zur Selektion rotlaufresistenter Schweine. **[Selective breeding of pigs resistant to swine erysipelas.]**—*Mh. prakt. Tierheilk.* **4,** 448-454. **1149**

A description of experiments in which several litters of pigs were artificially infected with *E. rhusiopathiae* and kept under close observation. The course and severity of the infection, together with the subsequent health-records of the animals, showed that certain litters were more resistant than others. It was presumed that the resistance was inheritable since other litters of the same parents, when similarly tested, gave similar results.

The authors called for more research, insisting, however, that useful results would be obtained only from large-scale observation on animals of known genetical origin.—A.S.

MANTOVANI, G. & MAGLIONE, E. (1952). Osservazioni sull'impiego della bacitracina nella infezione da Erysipelothrix rhusiopathiae. I. La bacitracina nella infezione sperimentale del topino. **[Bacitracin in treatment of experimental *E. rhusiopathiae* infection.]**—*Nuova Vet.* **28,** 255-265. **1150**

A single dose of 250 units of bacitracin increased the survival time of mice infected with *E. rhusiopathiae,* and 437·5 units given in 6 doses cured all infected mice.

—G. P. MARSHALL.

THOMSON, A. & GLEDHILL, A. W. (1953). **The demonstration of the protective value of a swine erysipelas vaccine in pigs.**—*Vet. Rec.* **65,** 40-42. [Authors' summary modified.] **1151**

The protective value of a formolized aluminium hydroxide adsorbed swine erysipelas vaccine was demonstrated by challenging vaccinated and unvaccinated pigs. Challenge by the application of culture to lines scarified in the skin proved unsatisfactory but the observations in one experiment indicated that this vaccine had a protective value.

Pigs vaccinated with swine fever crystal violet vaccine and thereafter challenged with virulent swine fever virus developed acute swine erysipelas following the i/m inj. of *E. rhusiopathiae.* [See DOYLE, T. M. *V.B.* **18,** 1409.]

Pigs so "prepared" were protected against swine erysipelas by the inj. of a single dose of this vaccine. The duration of immunity was at least 10 weeks.

ZARNIC, I. (1952). L'application du vaccin adsorbé contre le rouget du porc en Yougoslavie. **[Use of swine erysipelas adsorbate vaccine in Yugoslavia.]**—*Bull. Off. int. Epiz.* **38,** May. pp. 168-183. [English summary.] **1152**

The routine use of this type of vaccine over 3 years reduced the incidence of *E. rhusiopathiae* infection to 0·36% during the 5 months after a single vaccination, compared with an incidence of over 5% in non-vaccinated pigs. The immunity thus conferred by a single vaccination lasted for about 4 months.

—G. P. MARSHALL.

WIESSNER, W. (1952). Die kombinierte Penicillin - Formolvakzine - Behandlung des Schweinerotlaufes. (Ein Vergleich zwischen Serum- und Penicillintherapie; Verhütung von Rückfällen). **[Combined penicillin-formol vaccine treatment of swine erysipelas.]**—*Wien. tierärztl. Mschr.* **39,** 352-368. [English, French and Italian summaries.] **1153**

In field trials on the cure of swine erysipelas, penicillin gave a recovery rate of some 95% within 24 hours and was much superior to serum treatment, after which 80% recovered within 3 days. Vaccination with formalin-treated strains of *E. rhusiopathiae* simultaneously with penicillin treatment produced no untoward effects and neither serum nor active re-vaccination of cured animals was required.—MALCOLM WOODBINE.

ADLER, H. E. & NILSON, M. A. (1952). **Immunization of turkeys against swine erysipelas with several types of bacterins.**—*Canad. J. comp. Med.* **16,** 390-393. **1154**

Poults 1–7 weeks old were vaccinated with *E. rhusiopathiae* cultures and with tissues containing that organism. The tissue preparations gave better results than cultures against i/v challenge.—R. GWATKIN.

HELMBOLDT, C. F., JACOBS, R. E. & CASE, L. I. (1951). **An outbreak of porcine listeriosis.**—*Vet. Med.* **46,** 347-349. **1155**

An account of an outbreak of *Erysipelothrix* (*Listeria*) *monocytogenes* infection in a group of 175 Duroc-Jersey pigs, 6–8 months old, 12 of which had died in a period of 12 months associated with progressive paralysis of the limbs.

—J. T. DONE.

GRAY, M. L., LAINE, S. L. & THORP, F. JR. (1952). **Effects of aureomycin on *Listeria monocytogenes* and the production of encephalitic symptoms in rabbits.**—*Antibiot. & Chemother.* **2,** 537-543. [Authors' summary modified.] **1156**

It was found that *Erysipelothrix* (*Listeria*) *monocytogenes* failed to multiply in tryptose agar containing 0·25–0·75 μg. aureomycin/ml. Of 4 rabbits exposed i/v and treated with aureomycin, 3 survived. Of 21 rabbits exposed intracerebrally and treated with aureomycin, 12 survived; only 1 of 6 untreated animals survived; 5 treated rabbits developed symptoms simulating those seen in field outbreaks of *E. monocytogenes* infection. Cultures instilled into the eyes of rabbits produced only transitory symptoms when aureomycin ophthalmic ointment was applied. The organisms were highly susceptible to aureomycin and aureomycin appeared to be indicated in infections due to this bacterium.

I. OCHI, Y. (1952). La septicémie hémorrhagique et sa prophylaxie. [**Haemorrhagic septicaemia and its prevention.**]—*Bull. Off. int. Epiz.* **38,** May. pp. 226-232. [English summary.] **1157**

II. VITTOZ, R. (1952). Importance en Asie des facteurs géographiques et climatiques dans l'épizootologie et la prophylaxie des pasteurelloses. [**Geographical and climatic conditions in Asia influencing the epidemiology and prevention of haemorrhagic septicaemia.**]—*Ibid.* pp. 240-287. [English summary.] **1158**

I. The author described a classification of pasteurella pathogenic for animals into 4 types. Type A, "fowl cholera": Type B, causing septicaemic disease, is found in cattle, sheep, pigs and rabbits: Types C and D, causing contagious pneumonia in various mammals and birds, but never acute septicaemia.

Types A and B may be controlled by immune serum or vaccine made from killed bacilli. Types C and D cannot be effectively controlled in this way.

II. A tactical plan for controlling haemorrhagic septicaemia in buffaloes under Asiatic conditions. Asiatic buffaloes, kept undernourished and ill-housed in the paddy districts, are very susceptible to the disease when the monsoon brings the warm damp conditions favourable to it. The author suggested that field officers should map the districts in which the disease occurred regularly and immunize at least all valuable herds there before the coming of the monsoon. After this they should simply await outbreaks and carry out emergency immunizations where they occur.—A.S.

DELPY, L. P. (1952). Méthodes d'immunisation active contre les pasteurelloses septicémiques. [**Methods of immunization against haemorrhagic septicaemia.**]—*Bull. Off. int. Epiz.* **38,** May. pp. 209-218. [Abst. from English summary.] **1159**

Immunization against haemorrhagic septicaemia can be effected only by a solubilized antigen, extracted from a virulent strain of *Past. multocida.*

Pasteurella from living tissues become autolysed more rapidly than organisms from broth cultures. Mice vaccinated with broth culture are resistant to only 6 m.l.d. while those treated with chick embryo vaccine are resistant to 1,700 m.l.d. Carter [*V.B.* **22,** 929] succeeded in creating immunity by the i/p inj. of large doses.

It seems impossible to obtain artificially an absolute immunity to pasteurellosis. The dosage of the trial material must be very accurate. Animals which tolerate post-vaccination challenge with 30 m.l.d. are protected from natural infection for more than a year.

MANTOVANI, G. & MAGLIONE, E. (1952). Ricerche comparative sull'impiego della bacitracina, streptomicina, aureomicina e terramicina nella terapia della pasteurellosi sperimentale della cavia. [**Trials of bacitracin, streptomycin, aureomycin and terramycin on pasteurellosis in g. pigs.**]—*Arch. vet. Ital.* **3,** 297-309. [English, French, German and Spanish summaries. Abst. from English summary.] **1160**

In treatment of experimental pasteurellosis in the g. pig terramycin proved superior to aureomycin, streptomycin and bacitracin. The therapeutic action was greatest when the terramycin was administered during the first 2 hours after infection.

BAMFORTH, J. & DUDGEON, J. A. (1952). **The haemolytic activity of *Bact. coli*.**—*J. Path. Bact.* **64,** 751-761. [Abst. from authors' summary.] **1161**

The haemolytic activity of *Bact. coli* depends upon the presence of calcium salts, and to a lesser extent of salts of barium and stron-

tium in the medium. The organisms must be in a state of active multiplication. Any treatment, physical or chemical, that reduces the activity of the organisms also reduces their haemolytic power. No evidence was obtained of a filterable haemolysin.

JOSLAND, S. W. (1952). **A further note on the serological identification of salmonella cultures.**—*N.Z. Ass. Bact.* **7,** (no pagination) 4 pp. [Author's summary copied *verbatim.*] **1162**

A description of a systematic procedure in routine use at the Wallaceville Animal Research Station, New Zealand, for the serological identification of salmonella cultures.

ROLAND, F. & STUART, C. A. (1951). **"Directed mutation" toward streptomycin resistance in** *Salmonella typhi.*—*Antibiot. & Chemother.* **1,** 523-529. [Abst. from abst. in *Bull. Hyg., Lond.* **27,** 777. (1952).] **1163**

Slightly increased resistance to streptomycin was demonstrated in cultures of *S. typhi* added to filtrates or autolysates of cultures of *Bact. coli* or *S. wichita* which had themselves been rendered resistant to streptomycin.

MONTEVERDE, J. J. & GARBERS, G. V. (1951). Infecciones debidas a Salmonella abortivo-equina. III. Colecciones purulentas subcutáneas en potrillos de año. **[Subcutaneous abscesses in yearling foals caused by** *Salmonella abortus-equi.***]**—*Rev. Med. vet., B. Aires.* **33,** 158-165. [English summary.] **1164**

A description of *S. abortus equi* infection giving rise to subcutaneous abscesses in yearling foals on an Argentinian stud farm. The outbreak was effectively controlled by the segregation and treatment of affected animals and vaccination of the remainder.—A.S.

NIKOL'SKI, M. N. (1952). [*Salmonella* **infection in sheep.**]—*Veterinariya, Moscow.* **29,** No. 11. pp. 14-19. [In Russian.] **1165**

S. abortus-ovis was first discovered in the U.S.S.R. in 1930. N. gave a conventional account of the infection and described the results of infection tests on mice and g. pigs.—F.A.A.

CHRISTIANSEN, M. J. (1950). Graesmarksinfektion og kvaegbrucellose. Kastningsbakteriers levedygtighed i det fri, belyst ved praktiske forsøg. **[Pasture infection and bovine brucellosis. Viability of** *Br. abortus* **in the open.]** —*Maanedsskr. Dyrlaeg.* **61,** 253-288. [Abst. from English summary.] **1166**

From an investigation over 2 years of the risk of infection to healthy cattle sharing pasture and available drinking water—running or stagnant—with animals infected with *Br. abortus,* C. concluded that pasture in which aborting cattle have grazed may safely be used for healthy animals after one month, or possibly somewhat longer in dull weather. Infected cattle may be satisfactorily segregated in pens surrounded by double fencing with a gap of 2½ m., provided that dogs and other animals are not allowed to take infected foetuses or placentas away from the pens. Stagnant natural pools polluted by vaginal discharge, fragments of placenta etc., are highly infective and should not be used for at least one month after pollution. Effluents from dairies and abattoirs occasionally contaminate natural water courses.

LOKTEVA, F. P. (1951). **[Diagnosis of brucella infection in cattle by means of the conjunctival test.]**—*Veterinariya, Moscow.* **28,** No. 11. pp. 23-32. **1167**

The value of the conjunctival test using an abortin for diagnosing bovine type brucella infection was tested on 6,758 cattle on various farms over a period of 5 years. L. stated that cattle infected artificially by some unstated method did not react to the c.f. or agglutination tests until after an interval of 4–18 months, whereas they reacted to the conjunctival test after 15 days. He also stated that cattle reacted to the latter test for a much longer period of time than to the other 2 tests and he emphasized that such animals are infective for very long periods.—F.A.A.

RICE, C. E., BOULANGER, P., MACKIE, C. & MOORE, T. (1952). **The conglutination complement-fixation test as a supplementary method of detecting activity with** *Brucella abortus* **antigens.**—*Canad. J. comp. Med.* **16,** 348-356. **1168**

The routine plate and a conglutinating complement-absorption test were the first to detect low degrees of reaction in animals which became positive. The haemolytic complement-fixation test (H.C.F.) was the least sensitive. In cattle vaccinated with Strain 19, the H.C.F. became negative first and the plate agglutination test last. The number of non-specific reactions in negative herds was too small to evaluate the conglutination test in this respect.

—R. GWATKIN.

BARNER, R. D., OBERST, F. H. & ATKESON, F. W. (1952). **Anamnestic reaction as an aid in the differentiation of vaccinal from infection titres of brucellosis (abortus) in cows.**—*Vet. Med.* **47,** 323-326 & 348. **1169**

Upon revaccination of cattle possessing agglutinin titres, non-infected animals responded with a rapid rise in titre, whereas infected cattle showed no rise.—L. M. JONES.

SIEIRO, F. & ROSENBUSCH, C. (1952). **Comparative immunity experiments in cattle using live vaccines prepared from agglutinogenic and nonagglutinogenic *Brucella abortus* strains.**—*Amer. J. vet. Res.* 13, 476-485. 1170

On the basis of agglutinin response following challenge with virulent brucella, the authors concluded that vaccination of cattle with two intermediate strains produced a better immunity than vaccination with Strain 19.—L. M. JONES.

BERMAN, D. T., BEACH, B. A. & IRWIN, M. R. (1952). **Studies on repeated vaccination of cattle with *Brucella abortus* Strain 19. III. The response of vaccinated and revaccinated cattle to conjunctival exposure with a virulent strain of *Br. abortus* during the third gestation period.**—*Amer. J. vet. Res.* 13, 351-358. [Authors' summary modified.] 1171

Three groups of Holstein-Friesian heifer calves were vaccinated with *Br. abortus* Strain 19 at 8 months of age. Two of these groups were re-vaccinated at 14 and 20 months of age. In the third pregnancy, the cows of these groups, along with unvaccinated controls, were exposed by the conjunctival route with 12×10^6 organisms of *Br. abortus* Strain 2308. 15 of the 18 pregnant controls had abnormal parturitions with brucella infection demonstrable in 17. Two of 4 non-pregnant controls were also infected. Of the 14 cows vaccinated once, 4 had abnormal parturitions and brucella infection was found in 3 animals. Of the 18 cows vaccinated at 8 and 14 months of age, 2 aborted and 5 were found to be infected. 3 of 16 animals vaccinated at 8 and 20 months aborted, and 4 were found to be infected.

An increment in resistance engendered by re-vaccination at either 14 or 20 months of age was not apparent under the conditions of this experiment.

MORSE, E. V., RISTIC, M., WITT, L. E. & WIPF, L. (1953). **Canine abortion apparently due to *Brucella abortus*.**—*J. Amer. vet. med. Ass.* 122, 18-20. [Abst. from authors' summary.] 1172

An account of abortion in a bitch in which *Br. abortus* was isolated P.M. several weeks later, it being considered to have been the causative agent. The one puppy which survived was also found to be infected. The lesions in both animals were described.

GUALANDI, G. L. (1952). La brucellosi suina da "Brucella suis" in Italia. [***Brucella suis* infection in Italy.**]—*Arch. vet. Ital.* 3, 419-423. [English, French, German and Spanish summaries. Abst. from English summary.] 1173

On a pig-farm where 20 cases of abortion had occurred between the 60th and 100th day of pregnancy G. isolated *Br. suis* from the stomachs of aborted piglets.

TUZOVA, P. V. (1952). [**Phagocytic reaction in diagnosis of *Brucella* infection.**]—*Veterinariya, Moscow.* 29, No. 10. pp. 21-23. [In Russian.] 1174

The value of the opsono-phagocytic reaction as a prognostic and as a more reliable diagnostic test than agglutination reaction, c.f. reaction and allergy test was claimed to have been shown in tests on 150 g. pigs infected artificially with *Br. melitensis*.—F.A.A.

CARRÈRE, L. & QUATREFAGES, H. (1952). Du transfert local de l'allergie à la mélitine. [**Local transfer of allergy to melitin.**]—*C.R. Acad. Sci., Paris.* 234, 369-370. 1175

In healthy g. pigs injected with extracts of organs from g. pigs with *Br. melitensis* infection, the inj. of melitin did not produce a positive skin reaction. A positive reaction occurred with organ extract to which melitin had been added, but only if it had been in contact for at least 4 hours at 37°C. Mixtures of melitin with organ extracts from healthy animals did not produce a positive reaction.

—N. DEAN.

CAMERON, H. S., HOLM, L. W. & MEYER, M. E. (1952). **Comparative metabolic studies on the genus *Brucella*. I. Evidence of a urea cycle from glutamic acid metabolism.**—*J. Bact.* 64, 709-712. [Abst. from authors' summary.] 1176

Washed cells of *Br. abortus, Br. suis* and *Br. melitensis* were incubated with glutamic acid, and the metabolites identified by paper chromatography. The results suggested a urea cycle in *Br. abortus* and *Br. melitensis*. This was confirmed by incubation with ornithine, arginine, and aspartic acid as single substrates.

EIGELSBACH, H. T., BRAUN, W. & HERRING, R. D. (1952). **Studies on the immunogenic properties of *Bacterium tularense* variants.**—*J. infect. Dis.* 91, 86-91. 1177

The route of inoculation and the degree of natural resistance of the hosts employed were influential factors in the demonstration of inherent differences in the immunogenic capacity of smooth-reacting variants of *Brucella tularensis*.

—L. M. JONES.

INGRAM, P. L., JACK, E. J. & SMITH, J. E. (1952). **An outbreak of *Leptospira icterohaemorrhagiae* infection in calves.**—*Vet. Rec.* 64,

858-868. [Authors' summary copied *verbatim.*] **1178**

An outbreak of disease in calves was shown to be caused by *L. icterohaemorrhagiae*. In this outbreak, the mortality rate was low, although the majority of calves on the farm eventually became infected.

KATHE, J., ENGELHARDT, K. & GREVE, O. (1952). Allergische Erkrankungen nach Leptospirose. **[Allergic sequelae of leptospiroses.]**—*Zbl. Bakt. I.* (*Orig.*) **158,** 333-337. **1179**

The authors obtained evidence of an aetiological connexion between leptospirosis and equine periodic ophthalmia and irido-choroiditis in other animals. 52 of 73 horses with periodic ophthalmia had leptospira antibodies in their serum and the organism was isolated from the aqueous humour of another horse with the disease. The authors suggested that the eye condition is an allergic state in leptospirosis. In discussion on the paper Uhlenhuth gave information from human medicine supporting the theory.—J. EDWARDS.

KEMENES, F. & TAMÁS, L. (1952). Leptospirosis-e a lovak fibrines iridocyclitise (ú. n. havivaksága)? **[Is equine periodic ophthalmia a leptospirosis?]**—*Mag. allatorv. Lapja.* **7,** 301-305. [German and Russian summaries. Abst. from German summary.] **1180**

Serological tests revealed that the blood of horses with periodic ophthalmia contained *Leptospira* antibodies appreciably more often than that of healthy horses. The authors considered this to be good circumstantial evidence for a relationship between the disease and *Leptospira* infection.—A.S.

MARCUSE, K. & POHLMANN, R. (1952). Zur Epidemiologie der Leptospirose (speziell der Canicolainfektion) in Berlin. **[*Leptospira canicola* infection in Berlin.]**—*Zbl. Bakt. I.* (*Orig.*) **157,** 490-497. [English, French and Russian summaries.] **1181**

An account of an investigation into leptospirosis in dogs and human beings in and around Berlin where *L. canicola* has become prevalent in recent years, with 26–39% of canine sera reacting positively to the organism. Evidence of infection in man was, however, relatively slight and it was seldom possible to incriminate dogs for the spread of human leptospirosis. Many cases of undoubted leptospirosis in man have been seen in which serological tests were negative.—J. EDWARDS.

SPAIN, R. S. & HOWARD, G. T. (1952). **Leptospirosis due to *Leptospira grippotyphosa*. First report of occurrence in United States.**—*J. Amer. med. Ass.* **150,** 1010-1012. **1182**

An account of what is believed to be the first case of *L. grippo-typhosa* infection in man in the U.S.A.

MICEV, N. (1952). Enterotoksemii kaj ovcite pričineni od klostridium perfringens. **[*Clostridium welchii* infections in sheep.]**—*Vet. Glasn.* **6,** 333-340. [In Croat. French summary.] **1183**

Type B *Cl. welchii* infection (lamb dysentery), Type D (pulpy kidney disease in lambs) and Type C (struck in sheep) are common in Macedonia.—I. MARTINI.

HUGHES, D. E. & WILLIAMSON, D. H. (1952). **Some properties of the glutaminase of *Clostridium welchii*.**—*Biochem. J.* **51,** 45-55. **1184**

Using a purified form of glutaminase, the authors studied the effect of cetyltrimethylammonium bromide in accelerating the deamination and decarboxylation of glutamine and glutamic acid, in intact red cells or extracts of *Cl. welchii;* they consider that this accelerating effect is due to the removal of an intracellular inhibitor.—MALCOLM WOODBINE.

LERCHE, M. (1952). Eine durch Algen (Prototheca) hervorgerufene Mastitis der Kuh. **[Mastitis in a cow caused by *Prototheca zopfii*.]**—*Berl. Münch. tierärztl. Wschr.* **65,** 64-69. **1185**

L. described the morphology, staining and cultural characteristics of an alga, *P. zopfii,* isolated from mastitis in a cow. Optimum growth took place on beer-wort agar.

Mice injected i/p or s/c and two cows given intramammary infusions of culture were experimentally infected. G. pigs were not susceptible. —ROY MACK.

SIMON, J., NICHOLS, R. E. & MORSE, E. V. (1953). **An outbreak of bovine cryptococcosis.**—*J. Amer. vet. med. Ass.* **122,** 31-35. [Abst. from authors' summary] **1186**

An account of an outbreak of *Cryptococcus neoformans* infection of the udder, affecting 50 animals in a herd of 280 cattle. Terramycin, streptomycin, penicillin, neomycin, and sulphanilamide were all ineffective and the affected cows were slaughtered.

The infusion of penicillin without regard for aseptic technique appeared to have been responsible for the infection.

ZEIDBERG, L. D., AJELLO, L., DILLON, A. & RUNYON, L. C. (1952). **Isolation of *Histoplasma capsulatum* from soil.**—*Amer. J. publ.*

Hlth. 42, 930-935. [Abst. from authors' summary.] **1187**

Mycological studies of soil were undertaken as part of the general epidemiological investigation of histoplasmosis in Williamson County, Tenn. Of 299 soil, 18 chicken manure, and 35 house dust samples collected from 70 premises distributed over the County, isolations of *H. capsulatum* were obtained from 11 of the soil samples. Of 51 soil samples taken from inside chicken houses or chicken yards, 7 were positive; only 4 of 248 samples from other sources were positive. Of the 11 isolations of the fungus, 9 were obtained from soil samples from sheltered sites, and only 2 from open places, namely the chicken yards.

The association of domestic fowls with *H. capsulatum* in soil was investigated. The prevalence of histoplasmin sensitivity in chickens is apparently extremely low, and no infection was found.

The soils in which *H. capsulatum* was found were shallow, acid, and of slow permeability. The authors discussed the possible significance of these findings. Further studies of soil are suggested as a means of discovering the explanation for the observed sporadic geographic distribution of *H. capsulatum*.

Díaz-Rubio, M., Jiménez Orta, M. & Lamadrid, L. (1950). Estudio durante un año del contenido en hongos del aire de Cadiz; su relación con ciertos factores meteorológicos. **[A year's study of the fungal content of the air of Cadiz; its relation to certain meteorological factors.]**—*Rev. clin. esp.* 38, 182-191. [English, French and German summaries.] [Abst. in *Rev. med. vet. Mycol.* 1, 490. (1951), copied *verbatim*.] **1188**

During the year from April, 1948 to May, 1949, the fungal content of the air of Cadiz, Spain reached a peak from May to August and was low in the winter months. Of the total of over 2,000 colonies collected on nutrient media in Petri dishes, 67·5 per cent. were species of *Penicillium*, followed in descending order of frequency and local importance by *Cladosporium*, *Alternaria*, *Aspergillus*, *'Macrosporium'*, *Rhizopus*, *'Monilia'*, and 22 other genera. No close correlation could be established between the number of colonies developing on the plates and barometric pressure, temperature, humidity, and direction of the prevailing winds.

Loewenthal, K. (1951). **Effect of roentgen rays on *Microsporum canis*: an *in vitro* study.** —*Arch. Derm. Syph., Chicago.* 63, 750-758. [Abst. in *Rev. med. vet. Mycol.* 1, 510. (1951), copied *verbatim*.] **1189**

Colonies of *M. canis* on dextrose-peptone agar exposed to irradiation by 300 r of unfiltered X-rays remained macro- and microscopically unchanged, but some of their progeny exhibited abnormalities, consisting primarily in pleomorphic degeneration and massive deterioration of fuseaux formation. Presumptive evidence that these changes were the result of irradiation is based on (1) the occurrence of the degeneration phenomenon in two experiments and of the massive deterioration in four out of five; (2) the recurrence of both alterations in successive generations of colonies; and (3) the absence of both in the non-irradiated controls. Since occasional distorted spindles could be detected in a few control colonies, and because pleomorphism is of normal occurrence in *M. canis*, it is believed that the biological downward trend of an ageing strain was intensified and accelerated by irradiation.

Degos, R. & Rivalier, E. (1950). Rapport respectif des différentes teignes du cuir chevelu observées pendant les trois dernières années. **[Report on the different ringworms of the scalp observed during the last three years.]**—*Bull. Soc. franç. Derm. Syph.* 57, 211-212. [Abst. in *Rev. med. vet. Mycol.* 1, 506. (1951).] **1190**

During the previous three years 811 cases of tinea capitis were treated at a centre in Paris, of which 57·5% were caused by *Microsporum* spp., principally *M. canis*, with *M.* [*Trichophyton*] *ferrugineum* in 8 children from the Far East; 16·5% by *T. crateriforme* [*T. tonsurans*], *T. acuminatum* [*T. sabouraudi*], and *T. violaceum*, the last-named predominating in Jewish children from N. Africa temporarily quartered in France; 3 and 3·2% by microid and megasporous forms, respectively; and 20% by favus [*T. schoenleini*].

Matilla, V. & Peña-Yáñez, J. (1950). Estudios sobre la flora dermatofítica de España. II. Comunicación: especies aislados. **[Studies on the dermatophytic flora of Spain. Note II: species isolated.]**—*Arch. Med. exp.* 13, 17-25. [English, French and German summaries.] [Abst. from abst. in *Rev. med. vet. Mycol.* 1, 507. (1951).] **1191**

From 51 patients, of whom 31 were inhabitants of the city or province of Madrid, 15 of the city or province of Cádiz, and the remaining five of the provinces of Cáceres, Jaén, and Valladolid, the same number of dermatophytes were isolated, distributed as follows: *Trichophyton violaceum* and *T. schoenleini* 13 each, *T. tonsurans* 5, *T. mentagrophytes* 3, *T. sabour-*

audi 1, *Microsporum canis* 11, and *M. audouini* 5. Nearly all the cases of *T. violaceum* and *Microsporum* spp. occurred in the city or province of Madrid, while *T. schoenleini* was largely confined to Cádiz and its environs and the other rural areas.

VANBREUSEGHEM, R. & VAN BRUSSEL, M. (1952). Emploi et signification des cultures de dermatophytes sur terre et milieux à base de terre. **[Use of media containing soil in the cultivation of fungi causing ringworm.]**—*Ann. Parasit. hum. comp.* **27**, 541-556. **1192**

The authors were successful in cultivating the fungi which cause ringworm in media containing soil. They cited this in support of Vanbreuseghem's theory that these fungi are part of the normal soil flora, entering into the parasitic state only when conditions are favourable for infection.—A.S.

BIEBERDORF, F. W. (1953). **Actinomycosis of a bovine testis.**—*J. Amer. vet. med. Ass.* **122**, 49-50. [Abst. from author's summary.] **1193**

An organism isolated from the semen of a bull was probably a strain of *Actinomyces bovis*, identification being entirely based on its morphological characters. It grew fairly rapidly under anaerobic conditions in thioglycollate medium and very slowly aerobically.

AKÜN, S. (1952). Nokardiose bei zwei Katzen in der Türkei. [*Nocardia* **infection in two cats in Turkey.**]—*Dtsch. tierärztl. Wschr.* **59**, 202-204. **1194**

Following clin. diagnosis of purulent submandibular lymphadenitis and exudative pleurisy respectively,two cats were found, P.M., to have *Nocardia* infection. There were numerous lesions in the lungs, from the size of a grain of wheat to that of a hazelnut. Diagnosis was confirmed by section and culture.

—I. W. JENNINGS.

WAKSMAN, S. A., ROMANO, A. H., LECHEVALLIER, H. & RAUBITSCHEK, F. (1952). **Antifungal antibiotics.**—*Bull. World Hlth Org.* **6**, 163-172. [In English. French summary. Authors' summary copied *verbatim*.] **1195**

A comparative study was made of the antifungal properties of various antibiotics. In nature these are widely distributed and are produced by various groups of micro-organisms. They comprise two groups of substances: (a) those which are active against bacteria, actinomycetes, and fungi, and (b) those which are active against fungi but not against bacteria or actinomycetes.

The production of antifungal antibiotics by actinomycetes was also studied. As many as half of the freshly isolated cultures were found to have some effect upon fungi, and 20% or more had a marked effect. The antibiotics produced by these organisms have a wide spectrum, although some are highly active against yeast-like fungi and others against filamentous fungi. These antibiotics vary also in their fungicidal properties.

The mode of action of fradicin appears to have some relation to the oxidation-reduction potential of the cell, as is suggested by the fact that the inhibiting activity of this substance can be suppressed by reducing agents.

GOPALKRISHNAN, V. R. (1951). **Some observations on the regional and seasonal incidence of bovine contagious pleuro-pneumonia in Assam.**—*Indian J. vet. Sci.* **21**, 245-250. [Author's summary modified.] **1196**

G. recorded observations on the regional distribution and seasonal incidence of bovine contagious pleuro-pneumonia in 43 outbreaks in Assam over a period of 9 years, Jan. 1940 - 49.

Unrestricted cattle movement and the contact of animals on common grazing grounds permit spread of the disease. There does not appear to be any particular relation to climate or season.

CHAPLIN, C. E. (1952). **Bacterial resistance to quaternary ammonium disinfectants.** — *J. Bact.* **63**, 453-458. **1197**

The acquired resistance of *Serratia marcesceas* to alkyldimethylbenzyl ammonium chloride may be due to the increased lipoid content of the bacterial cell which provides protection against the disinfectant.—L. M. JONES.

BERLIN, B. S., JOHNSON, C., HAWK, W. D & LAWRENCE, A. G. (1952). **The occurrence of bacteremia and death in cortisone treated mice.**—*J. Lab. clin. Med.* **40**, 82-89. [Abst. from authors' summary.] **1198**

Subcutaneous injection of large doses of cortisone into normal laboratory mice caused death. On P.M. examination focal necrotic areas were seen in the viscera. A bacteraemia was found in cortisone-treated animals. This consisted of organisms generally regarded as normal inhabitants of the gastro-intestinal tract.

FISCHER, R. & LAROSE, P. (1952). **Mechanism of Gram stain reversal.**—*J. Bact.* **64**, 435-441. [Abst. from authors' summary.] **1199**

The authors demonstrated the conversion of *Bacillus cereus* to the Gram negative state with either picric acid or ribonuclease and reconversion to the original Gram positive state with

crystal violet. They described the conversion of *Bact. coli* to the Gram positive state by use of sodium bisulphite, sodium hydroxide, or crystal violet. Similarities in behaviour between Gram negative bacteria and intact wool as well as between Gram positive bacteria and degraded wool were demonstrated. The authors discussed the conversion and reconversion mechanism of the Gram staining behaviour of wool and of bacteria.

See also absts. **1322** (diseases of dogs in Brazil); **1412-1413** (cultivation of micro-organisms); **1423-1425** (reports, Australia); **1426** (report, Union of S. Africa); **1429** (report, U.S.A.).

DISEASES CAUSED BY PROTOZOAN PARASITES

SCHMITT, H. (1950). Die Beschälseuche in Bayern. Eine Folge des Krieges 1939/45. **[Dourine in Bavaria after the second world war.]**—*Inaug. Diss., Munich.* pp. 79. **1200**

A general paper describing the spread of dourine [*Trypanosoma equiperdum*] in Bavaria in the early post-war years, and the legal and therapeutic measures used in controlling it.

—A.S.

LOURIE, E. M. (1951). **"528", a new chemotherapeutic agent for *Trypanosoma congolense* infections.**—*Bull. Bur. interafr. Tsetse. Int. sci. Comm. Trypanosomiasis Res. Works and Final Report of the 3rd Session held at Bobo-Dioulasso Upper Volta 11-16th June* 1951. B.P.I.T.T. No. 161/0. pp. 3. [Mimeographed.] **1201**

Announcement of a new cinnolinium derivative, which seems to be as active against *T. congolense* as antrycide methyl sulphate.—J.D.

BURDIN, M. L. & PLOWRIGHT, W. (1952). **Comparison of the toxic effects of four trypanocidal substances for East African Zebu type of cattle.**—*Vet. Rec.* **64,** 635-639. [Abst. from authors' summary.] **1202**

In a small experiment using Boran cattle, to compare the toxicity of dimidium bromide, 2 other phenanthridinium compounds and antrycide, 2 animals were used at each of 3 dosage levels. The drugs were given s/c and 6 control animals were grazed in the same paddocks. Weight records were kept and weekly biochemical observations made on blood. Biopsy liver samples were examined histologically from all animals at the 5 mg./kg. level and more extensive histological investigations carried out on necropsy material.

Phenanthridinium compounds all produced a syndrome of delayed liver damage associated with loss in weight, but this occurred at different dosage levels. The order of toxicity appeared to be:—

2:7-diamino-9-*p*-aminophenyl-10-methyl phenanthridinium chloride—dimidium bromide —2:7-diamino-9-thienyl-10-methylphenanthridinium bromide.

Antrycide methyl sulphate, given subcutaneously at 10 mg. per kg., caused death in both animals injected, whilst 7·5 mg. per kg. of this drug caused a form of delayed toxicity differing from that with phenanthridinium compounds, in one out of 2 animals. The important changes found were an anaemia and nephrosis with secondary lesions dependent upon them.

ROUBAUD, E. (1952). Action de l'antrycide sur les infections trypanosomiennes des tsé-tsés. **[Action of antrycide on trypanosomes in tsetse-flies.]**—*Bull. Soc. Path. éxot.* **45,** 451-456. **1203**

The feeding of *Glossina caliginea* males on a goat and a g. pig, treated with antrycide methyl sulphate resulted in a reduction of developmental forms of the *T. vivax* type, although, in a few cases, active trypanosomes remained unchanged. In a similar test using antrycide chloride, trypanosomes ingested by tsetse flies appeared to be unaffected. These experiments gave no encouragement to R.'s hope that antrycide salts, when injected into host animals, might kill not only the trypanosomes in the host but also those in vectors feeding from it.—M. L. CLARKE.

PELLEGRINI, D. (1950). Il Tripanosoma vivax (Ziemann) nel cammello. **[*T. vivax* infection in the camel.]**—*Clin. vet., Milano.* **73,** 65-76. **1204**

P. reported spontaneous *T. vivax* infection in a camel in Italian Somaliland stated to be the first case reported in that host. The parasite was identified from its morphological, biometrical and biological characters. The disease was set up in 4 healthy camels. Three other spontaneous cases occurred after one of the experimentally infected animals had been introduced among healthy camels.—B. BALDELLI.

JUSSIANT & GASPARD. (1952). **The trypanosomiasis. Sickness difficult to disclose among the goat.**—*Bull. Bur. interafr. Tsetse.* B.P.I.T.T. No. 185/T. pp. 3. [Mimeographed.] **1205**

Symptoms of 2 cases (one fatal) of trypanosomiasis in goats were described. Few parasites (resembling *T. vivax*) were found only after

repeated examinations. The authors recommended treatment with dimidium bromide and antimosan.—M. L. CLARKE.

FLORENT. (1950). Diagnostic de la trichomoniase du bétail. **[Diagnosis of bovine trichomoniasis.]**—*Bull. Off. int. Epiz.* **33**, 375-401. **1206**

F. gave detailed accounts of direct microscopic examination, mucus and serum agglutination and the tricin test. Mucus agglutination tests in the cow and direct microscopic examination of preputial smears from the bull were recommended.—JAS. G. O'SULLIVAN.

GRUMBLES, L. C., BONEY, W. A., JR. & TURK, R. D. (1952). **Chemotherapy of enterohepatitis of turkeys. III. Comparative value of 2-amino-5-nitrothiazol and 2-acetylaminonitrothiazol in prevention and treatment.**—*Amer. J. vet. Res.* **13**, 572-574. [Abst. from authors' summary.] **1207**

2-Amino-5-nitrothiazole and 2-acetylaminonitrothiazole were effective in preventing mortality from enterohepatitis in 1,132 turkey poults when started at the time of exposure to *Histomonas meleagridis* and given continuously in the ration. Both drugs were of about equal prophylactic value, but neither was of significant value in reducing mortality when medication was delayed until an outbreak had occurred.

LOTZE, J. C. (1952). **The pathogenicity of the coccidian parasite,** *Eimeria arloingi*, **in domestic sheep.**—*Cornell Vet.* **42**, 510-517. [Author's summary modified.] **1208**

In its asexual phase the parasite was found to be more pathogenic than in the sexual phase. In the asexual phase the parasite brought about destruction of villi, and areas of the small intestine of the host became more or less edematous and thickened.

RUKAVINA, J. & NEVENIĆ, V. (1952). Prilog poznavanju rasprostranjenosti piroplasmoze u NR Hrvatskoj. **[Incidence of piroplasmosis in Croatia.]**—*Veterinaria, Sarajevo.* **1**, 475-480. [In Croat. Abst. from English summary.] **1209**

Information concerning the losses caused by piroplasmosis among cattle, horses, sheep, and goat in Croatia during 1946 and 1947. The figures were compared with those for 1933-35 and 1937.

RANDAZZO, V. (1951). Un focolaio di piroplasmosi suina in Sicilia. **[Piroplasmosis of pigs in Sicily.]**—*Atti Soc. ital. Sci. vet.* **5**, 382-384. [English and French summaries.] **1210**

The outbreak observed by R. was characterized by icterus, splenomegaly, haemoglobinuria and high fever. The causative agent was a large piroplasm resembling *B. bigemina*.

—I. MARTINI.

JANSEN, B. C. (1952). *Babesia thomasi* **sp. nov., an intra-erythrocytic parasite of the Cape dassie** [*Procavia capensis* **(Pallas).**]—*Onderstepoort J. vet. Res.* **25**, No. 3. pp. 3-6. [Author's summary modified.] **1211**

A new species of protozoan parasite in the Cape dassie was described for which the name *B. thomasi* was proposed. It was only slightly pathogenic for normal animals but fatal for splenectomised Cape dassies. A premunity develops in recovered animals. Attempts at transmission to cattle and g. pigs failed; the natural method of transmission is unknown. The Cape dassie is not susceptible to *Theileria parva* infection.

NEITZ, W. O. (1953). **Aureomycin in** *Theileria parva* **infection.** [Correspondence.]—*Nature, Lond.* **171**, 34-35. **1212**

Nine cattle infected by permitting infective *Rhipicephalus appendiculatus* ticks to feed on them were treated by i/v injection of aureomycin in large doses. The first injection was given on the day after infection and subsequent injections at varying intervals in the different experimental animals. No effect was produced on the erythrocytic stages of the parasites but a marked decrease in the number of schizonts in the lymph nodes occurred. Apart from a very mild febrile reaction and swelling of the superficial lymph nodes none of the treated cattle showed clinical evidence of the disease. Both untreated controls developed fulminating disease and died.

In one of the treated animals a solid immunity to re-infection was present when tested 4 weeks after disappearance of the schizonts. The remaining 6 will be tested for immunity later.—M.C.

DÉOM, J. (1952). Note sur un remède spécifique contre la Theilériose. **[Note on a specific treatment against** *Theileria* **infection.]**—*Path. gén.* [*Rev. Path. comp.*] **52**, 438-439. **1213**

Macerated leaves of *Iboza multiflora* (Labiatae) were given to two bullocks without having any curative effect. D. stated that *I. multiflora* is the same plant as *Coleus aromaticus* used by VAN SACEGHEM [*V.B.* **22**, 695.]

—JAS. G. O'SULLIVAN.

JORE D'ARCES, P. (1952). Les piroplasmoses bovines en Algérie. **[Babesia, Theileria and Anaplasma infections of cattle in Algeria.]**—

Bull. Off. int. Epiz. **38,** May. pp. 558-569. [English summary.] **1214**

Five species of piroplasms are parasitic in cattle in Algeria. *B. bigemina* and *B. berbera* infections yield to chemotherapy. Premunition against *A. marginale* is obtained with an *A. centrale* strain.

Theileriasis (*Th. dispar*) is much more difficult to deal with. Premunition has been abandoned. Therapy with chloroquine sulphate seems promising.

Tick destruction is effected with benzene hexachloride sprays.—J.D.

OTTEN, E. (1952). Statische Unterlagen zur Toxoplasmose-Komplementbindungsreaktion. **[Complement-fixation reaction in toxoplasmosis.]** — *Dtsch. tierärztl. Wschr.* **59,** 166. **1215**

Of 1,240 human and 164 canine sera tested at Hamburg, positive reactions were observed in 549 and 118 sera respectively.

—M. L. CLARKE.

SPARAPANI, G. C. (1950). La toxoplasmosi dei polli. **[*Toxoplasma* in the eggs of infected fowls.]**—*La Pediatria.* **58,** 411-414. **1216**

S. reported that microscopic examination of material from the ovaries of three hens affected by toxoplasmosis revealed the presence of many toxoplasms. Eggs from infected or suspected fowls should always be thoroughly cooked.—I. MARTINI.

INFANTE, F. B. & SENDROS, F. G. (1952). Una queratoconjuntivitis enzootica de los bovidos provocada por un protozoario. **[Enzootic keratoconjunctivitis in cattle caused by a protozoan parasite.]**—*Bol. Inf. Col. Vet. Esp. Suppl. cient.* **6,** No. 28. pp. 1-8. **1217**

A description of an epidemic among cattle near Arteijo in 1951. The authors described the development of the disease in its benign and malignant forms, and noted its association with cattle pastured in damp low lying areas.

Organisms considered to resemble protozoa in their staining reactions were demonstrable in the epithelial cells, but were not identified.—A.S.

See also absts. **1122** (comparison of agglutination of vibrios with agglomeration of trypanosomes); **1278** (tsetse carriers of trypanosomes); **1322** (diseases of dogs in Brazil); **1429** (report, U.S.A.).

DISEASES CAUSED BY VIRUSES AND RICKETTSIA

WILSON, W. W. & MATHESON, R. C. (1952). **Bird migration and foot-and-mouth disease.**—*Agriculture, Lond.* **59,** 213-228. **1218**

The origins of previous British outbreaks were reviewed together with known origins of present-day infections. The bird transmission theory was discussed and a detailed account was given of bird migration as it affects the British Isles. Comparisons were drawn between Continental outbreaks and the situation in Britain during the same periods. The time factor during which virus remains viable was shown to be adequate. It was concluded that there is strong ground for supporting the bird transmission theory.—G. V. LAUGIER.

ANON. (1952). **Outbreak of foot-and-mouth disease in Canada.**—*Vet. Med.* **47,** 157-158. **1219**

The difficulties encountered in early diagnosis and subsequent control owing to weather conditions were described. Measures adopted to prevent spread were briefly indicated.

—G. V. LAUGIER.

SEETHARAMAN, C. & DATT, N. S. (1951). **Frequency of occurrence of different strains of foot-and-mouth disease virus in India.**—*Indian J. vet. Sci.* **21,** 251-255. [Authors' summary modified.] **1220**

An analysis of the various types of F. & M. disease virus encountered in India. Apart from the standard strains 'O', 'A' and 'C' and their variants, one atypical strain was observed. Vallée 'O' type has been found to be preponderant in India as elsewhere in the world.

MANSO, F. (1951). Dos nueves variantes del virus A (Waldmann). Las variantes de los virus aftosos. **[Variant strains of foot and mouth disease virus type A.]**—*Bol. Inf. Col.* Vet. Esp., Supl. cient. **5,** 93-99. **1221**

M. suggested that producers of vaccine, in order to be able to produce effective vaccines for local needs, should be in close liaison with field officers. These officers should inform them fully of all strains encountered, and should quickly send for identification any new strain revealed by a break in immunity in a herd considered fully protected.—A.S.

BROOKSBY, J. B. (1952). **Vesicular stomatitis and foot-and-mouth disease: analysis of mixed infection in cattle.**—*J. Hyg., Camb.* **50,** 394-404. [Author's summary modified.] **1222**

It has been found possible to detect traces of the virus of F. & M. disease in mixtures of this virus and that of vesicular stomatitis by cross-immunity tests in cattle. A quantity of the virus of F. & M. disease as small as 1·3 I.D.50 was revealed by the inoculation of such

mixtures into cattle immune to vesicular stomatitis. B. suggested that such a method would be useful in the analysis of possible mixed infections in field outbreaks. The usefulness of c.f. tests to confirm the resolution of mixtures was demonstrated.

LAMIKHOV, K. F. (1952). **[Phenol treated whole blood of convalescents as a foot and mouth disease prophylactic.]**—*Veterinariya, Moscow.* **29,** No. 12. pp. 25-27. [In Russian.] **1223**

Whole blood of cattle convalescent from F. & M. disease was tried as a prophylactic. Nine parts added to one of a 5% phenol solution and injected [route not stated] 2 ml./kg. were found to be effective for all stock and for pigs. Later, when outbreaks occurred on 14 farms, about 300 calves and 80 piglets were treated. The rate of infection dropped sharply to *nil* even when calves were in contact with infected animals, while none occurred in conditions of close proximity. The effective period of this blood when preserved in air-tight tins was 6 weeks.—F.A.A.

NEMTSOV, B. A. (1952). **[Formalin in foot and mouth disease.]**—*Veterinariya, Moscow.* **29,** No. 12. pp. 29-30. [In Russian.] **1224**

Spraying the mouth three times daily with 0·5–1·0% formalin stopped the discharge of saliva in 1–2 days and healed the lesions. Good results were also obtained by using 1–2% formalin on the foot, followed by smearing the lesions with a tar and oil emulsion.—F.A.A.

BASSET, J. (1951). Vaccins anti-aphteux. A propos encore du vaccin Belin. **[The foot and mouth disease vaccine described by Belin.]** —*Bull. Acad. vét. Fr.* **24,** 465-470. **1225**

A continuation of a long correspondence involving Cl. Belin & Son; Basset answered and refuted criticisms of test methods made in a previous article. He pointed out certain marked discrepancies between the observations made by Cl. Belin and those of his son.—G. V. LAUGIER.

SCHANG, P. J. & ARAMENDI, M. C. (1952). Contribucion al estudio del valor inmunologico de variantes de virus aftoso. **[Immunogenic activity of foot and mouth disease variant viruses.]**—*Gac. vet., B. Aires.* **14,** 171-176. **1226**

Strains A_1, A_2 and A_3 were successfully neutralized *in vitro* within an hour, using A-serum from either horses or g. pigs. This was true for each strain alone or all mixed together.

O-A-C serum, whether from cattle, sheep, or pigs was similarly effective against the three strains. Calves and pigs inoculated with sufficient O-A-C serum were resistant to all 3 strains.

Experimental infection with the 3 strains (A_1, A_2 and A_3) gave full protection for over 8 months against mass injections of A type virus into the tongue.—A.S.

BOUCHET, A. (1952). La vaccination anti-aphteuse est-elle en échec? **[Is vaccination against foot and mouth disease a failure?]**— —*Bull Acad. vét. Fr.* **25,** 144-148. **1227**

A practitioner commented on the failure of vaccination to check the disease in France and of the effect of this on public opinion. Vaccination was, however, observed to modify the course of disease and give rise to symptoms of a benign character.—G. V. LAUGIER.

I. REAGAN, R. L., SCHENCK, D. M., HARMON, M. P. & BRUECKNER, A. L. (1952). **Morphological observations by electron microscopy of pseudorabies virus (Aujeszky strain) after propagation in the rabbit.**—*Amer. J. vet. Res.* **13,** 577-578. **1228**

II. REAGAN, R. L., HARMON, M. P., DAY, W. C. & BRUECKNER, A. L. (1952). **Studies of pseudorabies virus (Aujeszky strain) in the Rhesus monkey** (*Macaca rhesus*).—*Ibid.* 581-582. [Absts. from authors' summaries.] **1229**

I. Studies by electron microscopy of a concentrated virus-bearing brain suspension of rabbits showed the virus to be somewhat spherical with a diameter between 90 and 100 μ. These bodies could not be demonstrated in concentrated normal rabbit brain. Intracerebral injection of the infected material, into normal rabbits, produced typical symptoms of Aujeszky's disease. Virus suspensions from the brains of these rabbits injected intradermally into other rabbits produced pruritus and death within 72 hours. The virus in the concentrated material was infectious for unvaccinated g. pigs but had no effect on g. pigs immunized against Aujeszky's disease virus.

II. The Rhesus monkey (*Macaca rhesus*) was susceptible to intracerebral inoculation with the Aujeszky's disease virus. Monkeys infected intradermally and rectally showed slight nervous symptoms and some scratching. However, rabbits inoculated with brain suspensions from these animals showed no evidence of infection.

STARR, L. E., SELLERS, T. F. & SUNKES, E. J. (1952). **Apparent recovery of a dog from rabies.**—*J. Amer. vet. med. Ass.* **121,** 296. [Authors' summary copied *verbatim.*] **1230**

This is a report of an apparent recovery from rabies after the development of clinical symptoms, in which the clinical diagnosis of

rabies was confirmed by laboratory examination and recovery of the virus from the brain tissue and salivary gland. It is unfortunate that circumstances made it necessary to destroy the dog before a longer period of observation could have been used to establish conclusive proof of recovery from the disease.

ROSATI, T. & BADIALI, L. (1951). Osservazioni sulla virulenza per via sottocutanea del virus rabbico fisso addizionato a saliva di cane ed a jaluronidasi. **[Virulence of rabies virus injected subcutaneously along with hyaluronidase.]**—*Atti Soc. ital. Sci. Vet.* **5**, 293-300. [English and French summaries.] **1231**

The virulence of two strains of fixed virus was not enhanced by the addition of dog saliva or of hyaluronidase when the virus was injected s/c into rabbits. However a slightly increased virulence was observed in g. pigs.—I. MARTINI.

MALFATTI, M. G. (1949). Investigación en la rabia (virus fijo) mediante el microscopio electronico. **[Study of rabies (fixed virus) by electron microscopy.]**—*Rev. Asoc. med. Argentina.* **63**, 113-114. **1232**

A preliminary report of certain fine rounded granular elements observed with the electron microscope in (a) a rabbit brain suspension infected with fixed virus, (b) a Chilean vaccine prepared with merthiolate, (c) an Argentinian (Fermi) fixed virus vaccine and (d) an emulsion of bulbar tissue from a dog with furious rabies (street virus). Repeated examination of brain tissue from healthy rabbits failed to reveal the presence of similar elements.

The elements appeared coccoid, about 100 mμ in diam. and were arranged in pairs or short chains of 3 or 4, being clearly visible at 10,000 diam. They were observed also after centrifugation and filtration with a Swinney filter. Electron micrographs of the (b) and (c) material were included.—F.E.W.

KOPROWSKI, H. & BLACK, J. (1952). **Studies on chick embryo adapted rabies virus. III. Duration of immunity in vaccinated dogs.**—*Proc. Soc. exp. Biol., N.Y.* **80**, 410-415. [Authors' conclusions modified.] **1233**

The results of the present experiments seem to indicate that vaccination with living rabies virus is perhaps a more effective method of immunization of the canine population than any of the others at present available. Immunity conferred by vaccination with living rabies virus, as exemplified by the Flury strain in these experiments, lasts at least 2 years. These observations on the duration of immunity following live virus vaccination indicate the need for reconsidering local ordinance and other regulations concerning rabies vaccination.

MÜLLER, G. & MITROVIC, M. (1952). Sul controllo biologico dei vaccini antirabbici formolati. **[Formolized vaccines against rabies.]**—*Zooprofilassi.* **7**, 101-109. [Spanish summary.] **1234**

A modification of the Habel test was carried out successfully on g. pigs in order to establish the different potency of three antirabic vaccines. —I. MARTINI.

PETRINI, M. (1951). L'attività dell'Istituto Antirabbico di Milano dal 1889 al 1947. **[The work of the Antirabies Institute of Milan from 1889 to 1947.]**—*Boll. Ist. sieroter., Milano.* **30**, 360-375. [Abst. from English summary.] **1235**

P. reviewed the work of the Antirabies Institute of Milan from 1889 to 1947. He discussed differences in behaviour of the two vaccines used by the Institute (Pasteur vaccine and phenolized vaccine), the rabies mortality rate and its dependence on the type of vaccine used. The advantages of phenolized vaccine over the classical Pasteur vaccine were pointed out.

DARZINS, E. & BISMANIS, J. (1952). **Experience with the antirabic vaccination in the two world wars.**—*Z. Hyg. InfektKr.* **134**, 117-122. [In English. Abst. from authors' summary.] **1236**

Under war conditions it is not possible to produce enough vaccine from rabbits for the civilian population; and Pasteur's scheme of vaccination with 21 inoculations is impracticable. Production of vaccine from sheep, a complete decentralization of vaccination, the use of concentrated vaccine with few inoculations are possible solutions.

The first efforts in this direction were made in Latvia during the first world war, and further efforts in the second world war. The authors described the method of preparation of concentrated anti-rabic vaccine.

A total of 710 bitten persons were vaccinated, 367 of them with concentrated sheep vaccine and 343 with concentrated rabbit vaccine. 6 inoculations of 4 ml. of the vaccine were given within 6 days, one re-injection 30 days later. There were 3 deaths from rabies, all in women vaccinated with rabbit vaccine.

VIEUCHANGE, J. & LAVAL, E. (1952). Hémagglutination et virus de la variole aviare. **[Haemagglutination in fowl pox.]**—*Ann. Inst. Pasteur.* **82**, 186-193. **1237**

Fowl pox virus has some agglutinating

properties for fowl r.b.c. The haemagglutination reaction can therefore be used in fowl pox studies and the authors demonstrated the interrelationship between fowl pox and vaccinia virus. The H.I. test was also used for detecting fowl pox antibodies in healthy fowls.—J.D.

SAMPAIO, A. A. C. (1952). **Inhibitors of influenza virus haemagglutination in normal animal sera.**—*Bull. World Hlth Org.* **6**, 467-472. [French summary. Author's summary copied *verbatim.*] **1238**

A study of the inhibitors of influenza virus haemagglutination in a number of animal sera has shown two types of inhibitor: (a) Chu inhibitor, which is generally heat labile and is more active against unadapted than mouse-adapted influenza A viruses; (b) Francis inhibitor, which is heat stable and is more active against heated than unheated influenza B viruses.

An attempt has been made to assess roughly the content of each type of inhibitor in the different sera and to find the simplest methods of destroying or reducing their activity.

HULTIN, J. V. & MCKEE, A. P. (1952). **Fixation of "neutralized" influenza virus by susceptible cells.**—*J. Bact.* **63**, 437-447. [Authors' summary copied *verbatim.*] **1239**

A mixture of influenza virus and excess homologous antibody injected into the chicken embryo was reactivated by the subsequent injection of homologous concentrated inactive virus. The length of time elapsing between the injection of the neutralized virus and the introduction of inactive virus which could bring about reactivation was determined. Virus neutralized in excess of what was required to prevent hemagglutinin production was found to fix to the cells of the chorioallantoic membrane. The influence of time and the degree of neutralization on such fixation were studied. Some of the theoretical implications of the findings are discussed.

RODRIGUEZ, I. G. (1951). La primera enzootia de encefalomielitis infecciosa de los equidos, registrada en España. Como se llego a su identificacion. **[The first outbreak of equine encephalomyelitis in Spain.]**—*Bol. Inf. Col. Vet. Esp. Supl. cient.* **5**, 21-26. **1240**

R. described an outbreak of equine encephalomyelitis in Spain,which he believed to be due to a filtrable virus. As the diagnosis was made on clin. grounds and on pathogenicity for lab. animals only, it was not possible to identify the causal agent.—I. W. JENNINGS.

MÄDER, W. (1952). Beobachtungen über Behandlung von bornakranken Pferden. **[Treatment of Borna disease in horses.]**—*Mh. VetMed.* **7**, 43-46. **1241**

Of 9 cases treated with a combination of iodine, sulphanilamide and hexamine, 6 recovered sufficiently to work.—ROY MACK.

ACHTZEHN, W. (1951). Bornasche Krankheit, Impfung, Impferfolge und ihre Heilungsaussichten im Land Sachsen-Anhalt. Ein Überblick der Jahre 1900-1950. **[Vaccination and prognosis in Borna disease.]**—*Exp. VetMed.* **5**, pp. 19-37. **1242**

A survey of Borna disease in Saxony-Anhalt from 1900 to 1950 with a discussion of the usefulness of immunization, the greater susceptibility of younger horses, and the need for a conclusive diagnosis of the disease in the living animal.—A.S.

KASAI, K. [Edited by.] Contributors: AKAZAWA, S., HAGA, T., HAMADA, S., HIRATO, K., KOHANAWA, C., MIURA, S., NISI, T., ONO, Y., SOEKAWA, M., SUTO, H., TAJIMA, Y., TATEZAWA, E., UEDA, S., YAMAGIWA, S. & YAMASHITA, J. (1949). **Equine infectious anemia. Vols. I & II.** Vol. I. pp. vi+264. Vol. II. pp. v+172. Toyko: Ministry of Agriculture and Forestry. Livestock Bureau. Yokendo Inc. [In Japanese.] **1243**

These two volumes review the subject of equine infectious anaemia. The contributors are: K. Kasai, Member of the Kitasato Inst., Tokyo; S. Akazawa, Professor of the Nippon Vet. College, Tokyo-Musashisakai; T. Haga, Agric. Chemist, Kitasato Inst.; S. Hamada, Asst. Professor of the Hokkaido Univ., Sapporo; K. Hirato, Professor of the Hokkaido Univ.; C. Kohanawa, Professor of the Hokkaido Univ.; S. Miura, Vet. Bacteriologist, Hokkaido Agric. Exp. Sta., Sapporo; Y. Ono, Professor of the Nippon Vet. College; M. Soekawa, Assoc. Member of the Kitasato Inst.; H. Suto, Vet. Bacteriologist, Kitasato Inst.; Y. Tajima, Member of the Nat. Inst. of Hlth, Tokyo; E. Tatezawa, Member of the Tohoku Inst. for Anim. Hyg., Morioka; S. Ueda, Vet. Bacteriologist, Kitasato Inst.; S. Yamagiwa, Professor of the Hokkaido Univ., Sapporo; J. Yamashita, Asst. Professor of the Hokkaido Univ.

The chapters in Vol. I are: Synonyms, by Kasai, pp. 1-2; History, by Kasai, pp. 3-10; Aetiology, by Hirato, pp. 11-27; Resistance of the virus, by Miura, pp. 29-41; Susceptibility of animals other than solipeds to the virus, by Tajima, pp. 43-82; Diagnosis by provocation, by Soekawa and Nisi, pp. 83-88; Immunological

diagnosis, by Soekawa and Nisi, pp. 89-97; Transmission by parasites, by Yamashita, pp. 99-112; Pathology of anaemia, by Ono, pp. 113-132; Progress of pathological studies on equine infectious anaemia, by Yamagiwa, pp. 133-263. Vol. II deals with:—World geographical distribution, p. 1; Epidemiology, by Hirato, pp. 3-24; Secondary bacterial infection, by Kasai, Suto, Miura and Hamada, pp. 25-45; Biochemical diagnosis, by Akazawa, Tazima and Haga, pp. 47-57; Clinical haematology, by Miura, Hamada and Ueda, pp. 59-114; Clinical reports, by Tatezawa, pp. 115-138; Treatment, by Kohanawa, pp. 139-150; Immunity and immunization, by Soekawa, pp. 151-164; Transmission to man, by Kasai, pp. 165-172; Appendix: Catalogue of foreign vet. periodicals in the various institutions in Japan, pp. i-iv.

Extensive or quite extensive bibliographies are given at the end of each chapter covering hundreds of references.

It is stated that of the very large variety of animals tested, the disease has been set up only in the pig and that the susceptibility of pigs is very low. The work of other authors on attempts to infect other species is discussed in detail.

Methods that could be used in attempts to diagnose the disease are discussed, emphasis being laid on the difficulty so frequently encountered. Details are given of provocation measures such as heavy muscular work, bleeding, the injection of heterologous protein, etc. in order to permit injected virus to produce disease with clinical signs.

Immunological methods of diagnosis are dealt with:—the complement-fixation test; the precipitation test; a lipoid fixation reaction; haemolysis reactions; the haemagglutination-inhibition test; the conglutination test; allergy tests and anaphylactic reactions.

Transmission by arthropod and helminth parasites is discussed in detail.

The pathology of the disease is dealt with in great detail.

In the chapter on epidemiology, the variation in the virus content of the blood and urine of infected animals is discussed. It is assumed that infection is transmitted by biting insects and that infected mares transmit the disease to their offspring, that the disease is probably transmitted by coitus and that infection mostly occurs at pasture.

In the chapter on secondary bacterial infection, the role of common pathogens is discussed. In the chapter on biochemical diagnosis, emphasis is laid on the unreliability of such methods.

In the chapter on clinical haematology, the various factors are discussed.—Y. Tajima.

Steck, W. & Fortner, J. (1952). Au sujet de l'anémie infectieuse des équidés. Rapport concernant un voyage d'études aux Etats-Unis. **[Report on study tour in U.S.A.: equine infectious anaemia.]**—*Bull. Off. int. Epiz.* **38,** May. pp. 695-708. **1244**

The paper amounted to a general review of the present state of knowledge concerning the disease. The existence of carrier horses was recognized, and biting flies, particularly *Stomoxys calcitrans,* were generally believed to be the normal vectors.

The successful control of a large outbreak at Rockingham Park was described.—A.S.

Żuliński, T. (1951). Niedokrwistość zakaźna koni świetle badań i rozważań nad układem histiocytarnym. **[Equine infectious anaemia and the histiocyte theory.]**—*Méd. vét. Varsovie.* **8,** 16-20. **1245**

Characteristic changes can be found in the liver and spleen. There is definite interdependence between liver and spleen—the faster the spleen loses its power to store haemosiderin the more iron storing cells can be seen in the liver. There are changes in the reticuloendothelial system of the liver with considerable increase in the number of Kupffer cells. Cells in the reticuloendothelial system of the spleen become similarly differentiated.—J. R. Mitchell.

Plowright, W. (1952). **Observations on the behaviour of rinderpest virus in indigenous African sheep.**—*Brit. vet. J.* **108,** 450-457. **1246**

Before describing his experimental infections of sheep P. briefly reviewed the literature. This review seems to stop short at the year 1933 and it is stated that "whilst many older authors reported natural outbreaks in sheep, sometimes with mortality, no recent and authenticated instances are cited". [This may be correct in so far as the African continent is concerned but is certainly not the case in Asia. From 1935 onwards there are many reports of severe outbreaks of rinderpest in sheep and in goats in India, the Indian literature has been reviewed by Dhanda and Manjrekar (*V.B.* **22,** 3379). The disease has also been recorded in sheep and goats exported from India into Singapore and Ceylon (Whitworth & Rocker (1936) *Ann. Rep. Vet. Dept. Straits Settlem.*, Orr, W. (1945) *J. comp. Path.* and Crawford, M. (1944) *Ann. Rep. Dept. Agric. Ceylon.*). The disease as seen in the Indian sheep and goats in Ceylon was severe, the symptoms and lesions

were typical and it was readily reproduced in cattle and in buffaloes by inoculation of blood. Spread of the disease from the imported sheep and goats to Ceylon cattle and buffaloes occurred and caused heavy loss.]

In his experiments P. used indigenous Black-Head Persian sheep. In most experiments he injected them with a strain of rinderpest virus which had been maintained by needle passage in cattle for many years, in a few experiments a field strain of low virulence (long incubation period, slow temperature rise and high rate of recovery in cattle). He concluded that an inconstant and slight rise of temperature was the only effect observed, that viraemia occurred but was of short duration, that cattle did not develop rinderpest when put in contact with reacting sheep and that contact infection of sheep occurred on one occasion. [It would be useful to repeat these experiments using, not a laboratory strain of virus, but a highly virulent wild strain with good "spreading" properties.]—M.C.

LUCAS, A., BOULEY, G., PARAF, A. & QUINCHON, C. (1953). Variation du virus de la peste porcine en France. **[Swine fever variant viruses in France.]**—*Rec. Méd. vét.* **129,** 18-23. **1247**

A new variant of the swine fever virus in France. The variant breaks immunity in animals inoculated with the usual dose of normal serum, but a double dose provides effective protection.—A.S.

SZENT IVÁNYI, T. (1952). Untersuchungen zum serologischen Nachweis des Schweinepestvirus. **[Serological study of the swine fever virus.]**—*Acta vet. hung.* **2,** 129-141. [In German. Russian summary.] **1248**

If r.b.c. from pigs with swine fever are brought into contact *in vitro* with swine-fever immune serum, agglutination takes place. This reaction depends upon the use of a sufficiently conc. serum and upon whether the r.b.c. have had time to adsorb sufficient of the virus, which is often not the case until after a few days of infection.—A.S.

I. KOPROWSKI, H., JAMES, T. R. & COX, H. R. (1951). **Laboratory studies and data on modified live hog cholera vaccine.**—*Proc. 55th Ann. Meet. U.S. live Stk sanit. Ass.* 214-223. **1249**

II. HARVEY, M. J., BURKHART, R. L., LEAMING, J. D., PERCIVAL, R. C., SCHROEDER, C. R. & WELSH, M. (1951). **Field trial studies with Rovac.**—*Ibid.* 224-229. **1250**

III. CASSELBERRY, N. H. & WALKER, W. W. (1951). **Tissue culture modified live virus hog cholera vaccine.**—*Ibid.* 230-233. **1251**

IV. KILLINGER, A. H., DICK, J. R., PINKERTON, H. E. & WILLIAMSON, R. L. (1951). **A hog cholera vaccine prepared from a rabbit-modified swine-propagated live virus.**—*Ibid.* 234-237. **1252**

I. An account of experiments designed to test the immunogenic potentialities of a live vaccine of rabbit origin (Rovac) consisting of homogenized liver, kidneys, spleen and blood from rabbits infected with a strain of swine fever virus adapted to and maintained by serial passage in rabbits. Attenuation of the virus was apparent after the 80th rabbit passage, but field trials of the vaccine are based on the 245th and later passages which are apparently non-pathogenic for pigs.

Some degree of protection was present as early as 3–4 days after vaccination and immunity was solid at 12 months (the longest period tested to date). The vaccine protected not only against the stock virus, but also to a high degree against the variants isolated by the Bureau of Animal Industry in the U.S.A. in 1949 and 1950. Administration of immune serum either at the same time or up to 3 weeks before did not appear to interfere with the immunogenic power of the vaccine, but its effect on the duration of immunity was not tested at periods longer than 42 days.

II. 10,147 pigs in 74 susceptible herds were vaccinated by a single i/m injection of 2 ml. of a 1–4% tissue suspension of Rovac (see I *supra*). No deaths attributable to swine fever were observed in vaccinated droves during periods of 4–10 months. Of 852 representative animals challenged 14 days to 3 months after vacination 22 died of swine fever; another 18 deaths were ascribed to other causes.

III. Boynton's strain of virus has been maintained by 180 serial passages in tissue culture over a period of nearly 6 years. There is evidence that with an increasing number of tissue-culture passages the virus becomes markedly attenuated in its virulence for the pig, but when used as a live vaccine it may cause some mortality.

IV. Fort Dodge MLV vaccine contains live virus of Baker's A strain passaged in rabbits and propagated in pigs and marketed as a freeze-dried tissue suspension. The use of this vaccine alone on swine in a suboptimal state of health may cause "undesirable reactions" [and presumably death] and for this reason simultaneous administration of 15 ml. of immune serum is advised. Used in this way on 6,578

pigs the vaccine was said to be safe. Of 126 vaccinated pigs challenged with virulent virus 3 months or more later 96·8% survived. [See also *V.B.* **23, 437**].—J. T. Done.

Kodrnja, E. (1952). L'apparition et la lutte contre la maladie de Teschen en Slovénie. **[Occurrence and control of Teschen disease in Slovenia.]**—*Bull. Off. int. Epiz.* **38,** May. pp. 117-139. [English summary.] **1253**

An account of the elimination of Teschen disease in Slovenia, where it became endemic after its introduction in 1940 from Austria: 46,000 pigs, most of them young, were affected between 1940 and 1951.

A policy combining the isolation of infected herds with the slaughter of affected animals and the inoculation of the remainder, led to the complete eradication of the disease by mid '51.

—A.S.

Baker, G. A., Leader, R. W. & Gorham, J. R. (1952). **Immune response of ferrets to vaccination with egg-adapted distemper virus. I. Time of development of resistance to virulent distemper virus.**—*Vet. Med.* **47,** 463-466. [Abst. from authors' summary.] **1254**

Thirty-three ferrets were vaccinated with Onderstepoort strain of egg-adapted distemper virus at various intervals before and after inoculation with a virulent ferret-adapted virus; only one of those which received the egg-adapted strain of virus 2 or more days prior to the administration of distemperoid virus developed distemper. Those vaccinated simultaneously with or after the inoculation of distemperoid virus died with typical signs of distemper.

Potel, K. (1951). Histopathologie der Hundestaupe mit besonderer Berücksichtigung der nervösen Form. **[Histopathology of the nervous form of distemper.]**—*Exp. Vet.-Med.* **4,** 44-97. **1255**

After a review of the literature P. reported on the P.M. examination of 567 dogs; 80 of these—66 with the catarrhal form and 14 with the nervous form of distemper—were also submitted to a detailed histological examination. The most regular lesion was proliferation of the r.e.s throughout the body, but particularly in the bone-marrow and liver. The blood circulation in the intestine and the brain was severely disturbed. Pathologically the nervous form of distemper could not be clearly separated from the catarrhal form, but the damage to the nervous tissue was more intense in the first. The degenerative changes, mainly in the hippocampus, are mainly due to the damaged circulation. No encephalitic reaction was seen in the areas where the nerve cells were destroyed. But the meningitis which was frequently found extended to the adjoining parts of the central nervous tissue with the picture of encephalitis. In most cases transmission experiments proved the presence of the virus in the c.s.f. Inclusion bodies were never found, either in the nervous tissue or elsewhere.—A. Mayr-Harting.

Teller, H. (1952). Über Behandlung katarrhalischer, intestinaler und pektoraler Staupe mit Lachesis. **[Treatment of the catarrhal, intestinal and respiratory forms of distemper with *Lachesis* snake venom.]**—*Mh. VetMed.* **7,** 339-343. **1256**

64 dogs with catarrhal, intestinal, or respiratory distemper were treated by injection at intervals with venom from snakes of the genus *Lachesis*. With an interval of 2 or 3 days the treatment normally required 2 or 3 injections, or at the most 6, but larger intervals were found to delay the cure.—A.S.

McKercher, D. G. (1952). **Feline pneumonitis. I. Immunization studies in kittens.**—*Amer. J. vet. Res.* **13,** 557-561. [Abst. from author's summary.] **1257**

Of 34 kittens vaccinated with either active or inactivated feline pneumonitis virus, 26 failed to develop observable symptoms of the disease following intranasal challenge with viable virus whereas the controls were infected. The 8 remaining vaccinated animals displayed characteristic, although relatively mild, symptoms of the disease. The crude yolk sac virus vaccine would appear to be the one of choice, mainly because of simplicity in preparation.

Inasmuch as the most antigenic of the vaccines were prepared from materials which contained considerable amounts of toxin, indications are that complement-fixing antibodies in high titre to the virus are essentially antitoxic in nature. However, the significance of these in immunity to feline pneumonitis is not clear.

Woernle, H. & Siegmann, O. (1952). Blutuntersuchung zur Diagnosestellung der Geflügelpest am toten Tier. **[Examination of blood in the P.M. diagnosis of fowl plague.]**—*Dtsch. tierärztl. Wschr.* **59,** 373-375. **1258**

The authors criticized the methods at present used in diagnosing fowl plague, and described a haemagglutination-inhibition test using antibodies extracted from the organs of dead fowls from which no serum could be obtained.—A.S.

Geurden, L. M. G., Devos, A. & Mortelmans, J. (1950). Pseudovogelpest in België. **[Newcastle disease in Belgium.]**—*Vlaam.*

Diergeneesk. Tijdschr. **19**, 125-129. [English, French and German summaries.] **1259**

The authors gave some details on the origin of the 1949-50 outbreak of Newcastle disease in Belgium.—J.D.

ATANASIU, P. & SUOTO PATULEIA, M. C. (1952). Action des rayons ultra-violets sur le pouvoir hémagglutinant et le pouvoir infectieux du virus de Newcastle. **[Action of ultra-violet light on the haemagglutination activity and on the infectivity of Newcastle disease virus.]** —*Ann Inst. Pasteur.* **83**, 478-486. **1260**

Irradiation of N.D.V. rapidly decreased its infectivity and more slowly destroyed its power of agglutination. The authors considered that the nucleoprotein responsible for virulence was perhaps more sensitive to U.V. rays than the enzyme responsible for agglutination.—A.S.

GUSTAFSON, D. P. & MOSES, H. E. (1952). **Some effects of oral exposure of English sparrows to Newcastle disease virus.**—*Amer. J. vet. Res.* **13**, 566-571. [Authors' summary modified.] **1261**

The virus was recovered from the liver, lungs, blood, brain,or intestinal contents of 14 of 58 exposed sparrows (*Passer domesticus*).

Assessment for N.D.V. in faecal samples by inoculation of chick embryos was hindered by an embryo-lethal factor; however, the virus was recovered by this method from one of 72 samples. Demonstration of transmission of N.D. from sparrows to chickens was not accomplished by close association of the birds, although evidence of infection of the sparrows was shown.

Histopathological studies revealed lesions in certain tissues which appeared to be associated with infection by the virus. The results are interpreted to signify that the sparrow has a measure of natural susceptibility to N.D.V. introduced *per os*.

FREUDENBERG, H. (1950). Zum Nachweis der Immunität bei atypischer Geflügelpest. **[Demonstration of immunity in Newcastle disease.]**—*Berl. Münch. tierärztl. Wschr.* No. 11. pp. 233-235. **1262**

The adsorbed vaccine described by Traub [*V.B.* **16**, 1551-1552] was shown to be effective in providing immunity to Newcastle disease, provided it were properly prepared and used.

—I. W. JENNINGS.

GUALANDI, G. (1950). Ricerche tra inibizione dell'emoagglutinazione e immunità nei polli vaccinati con vaccino embrionale formolato e vivo (ceppo di Hertfordshire). **[Inhibition of haemagglutination and immunity of fowls vaccinated with formolized and live (Hertfordshire) vaccines.]**—*Clin. vet., Milano.* **73**, 289-298. **1263**

Blood sera of fowls vaccinated with formolized vaccines did not inhibit haemagglutination. Sera of fowls vaccinated with live (Hertfordshire strain) vaccines inhibited haemagglutination. Fowls vaccinated with live vaccine did not excrete virus and were not therefore a source of infection for unvaccinated fowls.

—B. BALDELLI.

ZUIJDAM, D. M. (1952). Pseudovogelpest. Vaccinatie en virusuitscheiding. **[Newcastle disease. Vaccination and excretion of the virus.]** —*Thesis, Utrecht.* pp. 123. [Abst. from English summary.] **1264**

One dead and three live Newcastle disease vaccines were studied for their relative efficacy and the length of time for which the virus was excreted by vaccinated flocks. 10–16-week-old chicks were challenged *per os* with virulent material about 3 months after immunization. Those which had been inoculated with either Beaudette's or hens'-egg modified Mukteswar live vaccines appeared to be completely immune and excreted the virus in the faeces for periods varying from 15–19 days after vaccination, but not after challenge exposure. Those inoculated with duck-brain modified Haifa live vaccine or with formol-inactivated aluminium-hydroxide adsorbed vaccine were only partly immune (even after repeated inoculation with the latter); 15–20% of the Haifa vaccine group excreted the virus for 1–3 days following vaccination. Prolonged excretion of virus after challenge exposure was seen in both groups (for 11 and 33 days after exposure, respectively) 80–90% of the birds showing no clinical symptoms. Z. advised isolation of newly acquired chicks for 5–6 weeks before being introduced into a susceptible flock.

—G. P. MARSHALL.

QUINN, J. P. & THOMPSON, C. H., JR. (1952). **Effect of Newcastle disease live-virus vaccination of immature White Leghorn pullets on subsequent egg quality.**—*Poult. Sci.* **31**, 695-699. [Authors' summary copied *verbatim.*] **1265**

Observations on 3,224 eggs were made to compare the quality of eggs from pullets vaccinated at 3 months of age with the quality of eggs from unvaccinated pullets. No differences between these groups were found in percentage of thick white of fresh or incubated eggs, or in percentage loss of thick white of incubated eggs. No differences were observed in shell quality, candled quality of eggs or albumen scores. Egg

weights were approximately equal in both groups when maximum egg weight was attained. The live-virus vaccination for Newcastle disease of White Leghorn pullets at 3 months of age had no apparent effect on egg quality, egg production,or sexual maturity.

JANSEN, J., KUNST, H. & VAN DORSSEN, C. A. (1952). Opnieuw een gèval van eendenpest. **[A case of duck plague in the Netherlands.]** —*Tijdschr. Diergeneesk.* **77,** 220-223. [English summary.] **1266**

A report of an outbreak in 1951; there was cross immunity with the virus of 1940 [see *V.B.* **21,** 2594].—C. A. VAN DORSSEN.

GRUMBLES, L. C., BONEY, W. A., JR. & DELAPLANE, J. P. (1952). **The spread of infectious sinusitis of turkeys to chickens by natural means.**—*Poult. Sci.* **31,** 809-812. [Authors' summary modified.] **1267**

The natural transmission of infectious sinusitis of turkeys to chickens in direct contact with or in close proximity to turkeys is reported. Newcastle disease or infectious bronchitis may have caused the symptoms in chicks infected with the virus of turkey sinusitis to be more pronounced. These data substantiate the belief that the chronic respiratory disease of chicks and infectious sinusitis of turkeys have a common aetiological agent.

DERRICK, E. H. (1952). **["Q" fever.]**—*Med. J. Aust.* Oct. 18th, 566-567. **1268**

A review and discussion of the epidemiology of Q fever and the role of domestic animals as sources of infection.—IAN DAVIDSON.

STOENNER, H. G. & LACKMAN, D. B. (1952). **The role of the milking process in the intraherd transmission of Q fever among dairy cattle.**—*Amer. J. vet. Res.* **13,** 458-465. [Authors' summary modified.] **1269**

Five cows, which were repeatedly exposed to *Rickettsia burneti* by dipping their teats in infectious milk, remained refractive to infection. These cows were then exposed to milk containing both *R. burneti* and *Streptococcus agalactiae*. Three of the five contracted streptococcic mastitis, whereas all remained refractive to infection with Q fever rickettsia. Natural Q fever infections in dairy cattle are not therefore acquired by entrance of rickettsia through the teat canal.

SLAVIN, G. (1952). **"Q" fever: the domestic animal as a source of infection for man.**—*Vet. Rec.* **64,** 743-750. Discussion pp. 751-753. **1270**

Using antigen prepared at Weybridge, 3,767 bovine sera and 8,343 sera from g. pigs inoculated with cow's milk were examined by the c.f. test. No correlation was found between bovine serum titres and the excretion of rickettsia in the milk.

A table shows the number of farms sampled and the number found positive in each county of Gt. Britain. One map shows the locations of all these farms and a second those of positive farms.—IAN DAVIDSON.

ROSATI, T. & BERARDUCCI, C. (1951). Sul risanamento del latte e dei formaggi naturalmente inquinati da Coxiella burnetii. **[Sterilization of milk and cheese infected with *Rickettsia burneti*.]**—*Atti Soc. ital. Sci. vet.* **5,** 348-355. [English and French summaries.] **1271**

In naturally infected milk a temp. of 80°C. kills *R. burneti* in one minute. The organism does not seem to survive more than 25 days in ripening cheese.—I. MARTINI.

See also absts. **1322** (diseases of dogs in Brazil); **1423** and **1424** (reports, Australia); **1426** (report, Union of S. Africa); **1427** (report, India); **1429** (report, U.S.A.).

IMMUNITY

RIECKENBERG, H. (1951). Über Schutzimpfung und Immunität. **[Immunization and immunity.]**—*Zbl. Bakt. I. (Orig.)* **157,** 333-341. **1272**

The author reported on earlier experiments which led to his publication in 1917 of the thrombocyte reaction of mice against trypanosomes. He concluded that there is no absolute immunity against trypanosome infections, and that the trypanosomes found in chronic infections differ immunologically from those in acute infections. Immunity is increased by the repeated uptake of living trypanosomes in such small numbers that they do not cause re-infection. Parallels were drawn between trypanosomiasis and vaccinia vaccination, particularly with regard to the observation that vaccination affords life-long protection only in countries where smallpox is endemic and frequent encounters with the virus must occur.

—A. MAYR-HARTING.

GILLISSEN, G. (1952). Versuche an Kaninchen über die Wirkung von Cobalt auf den Anti-

körpertiter des Blutes. [**The action of cobalt on the antibody titre in rabbit blood.**]—*Z. Hyg. InfektKr.* **134,** 173-176. **1273**

Ingestion of $CoCl_2$, 10 mg. daily, did not affect the antibody titre resulting from injection of methyl alcohol extract of tubercle bacilli in rabbits.—N. DEAN.

MALONEY, M. A., CONKLIN, J. & LEVENSON, S. M. (1952). **A method for quantitative identification of canine erythrocytes.**—*Proc. Soc. exp. Biol., N.Y.* **80,** 486-489. [Authors' summary copied *verbatim.*] **1274**

A procedure for the quantitative determination of injected canine erythrocytes by a differential agglutination technic utilizing lyophilized type-specific anti-sera is described. The method was applied in a study of erythrocyte survival after transfusion of blood. Approximately 20% of the blood of the recipient dogs was withdrawn and immediately replaced with an equal volume of donor blood. Determinations were made of red cell volume, plasma volume, donor and recipient red cell counts. Serial examinations of bone marrow and peripheral leucocytes were also made. Destruction of infused cells proceeded at a rate of about one per cent per day. No changes in bone marrow morphology or peripheral leucocytes were noted. Nitrogen balance was not significantly changed.

See also absts. **1111-1112** (staphylococcal mastitis); **1122** (agglutination and agglomeration); **1125-1126** (haemagglutination in TB.); **1127** and **1139** (B.C.G.); **1151-1154** (swine erysipelas); **1159** (pasteurellosis); **1162** (serological identification of salmonella cultures); **1168-1171** (brucellosis); **1175** (allergy to melitin); **1176** (tularaemia); **1225-1227** (F. & M. disease); **1233-1236** (rabies); **1237** (fowl pox); **1238** (haemagglutination of influenza virus); **1247-1252** (swine fever); **1254** (distemper); **1257** (feline pneumonitis); **1258** (fowl plague diagnosis); **1260-1265** (Newcastle disease); **1281** (immunity and metabolic rate).

PARASITES IN RELATION TO DISEASE [ARTHROPODS]

MOORE, S. (1952). **Control and eradication of chicken lice with lindane.**—*Poult. Sci.* **31,** 444-447. **1275**

A 1% lindane dust applied as a single application on the litter at the rate of 3 lb. per 1,000 sq. ft. gave effective control of *Eomenacanthus stramineus, Menopon gallinae,* and *Gonioctes hologaster.* Control was also effected by vaporizing 1 g. of lindane per 20,000 cu. ft. daily for 14 days.—D. W. JOLLY.

CARLSTRÖM, B. (1952). L'hypodermose. [**Warble flies in Sweden.**]—*Bull. Off. int. Epiz.* **38,** May. pp. 658-665. [English summary.] **1276**

A report on the incidence of *Hypoderma* infestation of cattle in Sweden and its control. It occurs mostly in the southern part of the country. Eradication by the use of a derris preparation is state aided.—J.D.

GONZALEZ, M. R. (1952). Furunculosis cutanea por larvas de *Dermatobia cyaniventris* (Macquart 1840). Incidencia en perros (Canis familiaris). [*Dermatobia hominis* **in dogs.**]—*Bol. Direcc. Ganad., Montevideo,* **33,** 91-97. **1277**

An account of parasitism of dogs by *D. hominis* in Venezuela. This parasite causes considerable damage to Venezuelan cattle.—A.S.

NASH, T. A. M. (1952). **Some observations on resting tsetse-fly populations and evidence that** *Glossina medicorum* **is a carrier of trypanosomes.**—*Bull. ent. Res.* **43,** 33-42. **1278**

Specimens of *G. medicorum,* and *G. fusca,* were captured in Nigeria while they were resting on vegetation during their non-feeding periods. Both are night feeders, and catches during the day indicated that a good cross section of the population had been taken, of which 44-45% proved to be females. Gorged flies were numerous, and after dissection 14% of *G. medicorum* carried mature trypanosomes, including representatives of both the *T. vivax* and *T. congolense* groups. Efforts to apply the same technique to *G. morsitans* proved less successful, as these flies generally rested out of reach. However some observations were made on the resting position of the fly in relation to hunger and sex.—D. W. JOLLY.

JACKSON, C. H. N. (1952). **A new specific character for tsetse-flies** (Glossina) **of the** *morsitans* **group.**—*Ann. trop. Med. Parasit.* **46,** 218-219. [Author's summary modified.] **1279**

Although other good characters served to distinguish the five species of the *morsitans* group of *Glossina,* the ninth tergo-sternum seemed so conspicuous and so very characteristic of each species that J. considered it to be quite as useful as other criteria provided by the male genitalia. In particular, it seemed especially useful in distinguishing the closely related species *G. pallidipes* and *G. longipalpis,* the constricted or square shape of the slot being visible at a glance. Whether it may prove a useful character for separating the races of such a relatively fluid species as *G. morsitans* J. was not able to say.

BAUMGARTNER, H., HAGNAUER, W. & BERNET, R. (1952). Die Ausscheidung von Hexachlorocyclohexan mit der Milch nach der Räudebehandlung von Kühen. [**Excretion of benzene hexachloride in milk following treatment of**

mange in cattle.]—*Schweiz. Arch. Tierheilk.* **94,** 209-214. **1280**

In 17 cows with mange that had been dressed with B.H.C. preparations, the amount of B.H.C. in the milk varied from 0·01 to 0·9 mg./l. during the 3 or 4 days after treatment.
—Roy Mack.

Leech, F. B. & Spence, T. (1952). **Immunity and metabolic rate: the course of notoedric scabies in rats with different metabolic rates.** —*Parasitology.* **41,** 224-228. **1281**

In normal rats the initial severe phase of *Notoedres muris* infestation was followed by a partial recovery with survival of a smaller population of parasites. In rats with a raised metabolic rate resulting from administration of iodinated casein the recovery process was hastened and resistance to the development of severe disease was enhanced. In rats with a depressed metabolic rate resulting from administration of methylthiouracil the recovery process was retarded and the development of severe disease was reduced. The level of residual infestation following the severe phase of the disease was decreased by the higher and increased by the lower metabolic rate.—F.E.W.

Thorburn, J. A. (1952). **The control of ectoparasites of domestic stock with "toxaphene".** —*J. S. Afr. vet. med. Ass.* **23,** 171-178. **1282**

A review, including unpublished work, on the value of toxaphene, for the control of ectoparasites, mainly of cattle. Dips and sprays containing 0·25–0·5% toxaphene afford good control of ticks, in particular, *Boophilus* spp. In addition toxaphene can eradicate lice, keds, and sheep scab, and reduce fly worry of horses and cattle.—D. W. Jolly.

Gulyás, M. (1952). [**The nature of the paralysis of fowls produced by** *Argas persicus*.]—*Acta vet. hung.* **2,** 41-67. [In Russian. German summary.] **1283**

G. spoke of the production of paralysis in fowls by the blood-sucking of *Argas* ticks, in the absence of known pathogenic micro-organisms. He stated that when blood was mechanically removed from fowls a similar paralysis developed. Speculating whether the ticks might secrete a toxin while feeding he prepared a suspension of the head parts of *Argas* which he injected s/c into healthy unbled fowls: no paralysis developed in them.—A.S.

See also absts. **1203** (tsetse flies); **1304** (*Simulium*); **1423-1424** (reports, Australia); **1429** (report, U.S.A.).

PARASITES IN RELATION TO DISEASE [HELMINTHS]

Heydt, R. (1952). Die Beurteilung der von Dicrocoelium lanceolatum befallenen Organe im Rahmen der Fleischuntersuchung. [**Inspection of organs infested with** *D. lanceolatum*.]—*Lebensmitteltierarzt.* **3,** 22-23. **1284**

H. discussed the regulations concerning the use of livers infested with *D. lanceolatum* and *Fasciola hepatica*. Where *D. lanceolatum* was concerned the most sensible interpretation seemed to be that heavily infested livers should be destroyed, while lightly infested livers might be sold after at least 15 minutes' soaking in boiling water.—A.S.

Vercruysse, R. (1952). Het leverbotprobleem en zijn bestrijding. [**Control of** *Fasciola hepatica* **in Belgium.**]—*Vlaam. Tijdschr. Diergeneesk.* **21,** 117-123. [English, French and German summaries.] **1285**

In the period Oct. 1946 - June 1947 the livers of 1,438 out of 12,382 animals slaughtered at the Ghent abattoir were condemned on account of *Fasciola* infestation. The author discussed control measures on conventional lines.
—F.E.W.

Durbin, C. G. (1952). **Longevity of the liver fluke,** *Fasciola* **sp. in sheep.**—*Proc. Helm. Soc. Wash.* **19,** 120. **1286**

Twenty-one and 15 flukes respectively (presumably *F. hepatica*) together with viable eggs were recovered from sheep approx. 8 to 11 years after experimental infestation, no further infestation having occurred in the meantime.
—S. Brian Kendall.

Wade, L. L. (1952). **Effects of low temperature on the eggs of the common liver fluke (Fasciola hepatica) in beef livers.**—*Amer. J. vet. Res.* **13,** 345-347. [Author's summary modified.] **1287**

Eggs of *F. hepatica* were all killed by freezing in small vials of water for 24 hours at 19°F. or below; they survived for at least 6 days at 26°F. and 9 days at 30°F. They survived in large numbers in 2 livers after 2 days' exposure at a mean temp. of 8·7°F. and in one of 2 livers exposed for 3 days at 10·2°F.; whereas all were killed in livers frozen 4 days at mean temp. of 9·4° and 9·8°F., 5 days at 10·4°F., and 6 days at 10·2° and 11·6°F. respectively. Large numbers survived in all livers exposed 2–4 days at mean temp. ranging from 16·4° to 17·5°F. The incidence of survival decreased until, on longer exposure, 5 or less eggs in 2 out of 11 livers survived 8 days at a mean temp. of 17·2°F. Eggs were killed in all

livers frozen 9 days at mean temp. ranging between 15·9° and 17·7°F., when exposed under the experimental conditions described herein.

Based on these results, the requirements for freezing livers containing flukes have been amended; livers must be held for not less than 10 days at a temp. not higher than 15°F. or for a period of not less than 5 days at a temp. not higher than 10°F. The storage time at these temp. is doubled for containers of liver over 7 in. but less than 27 in. thick.

Ros, J. R. (1951). Una nueva parasitosis en España *Brachylaemus suis* (Balozet, 1936). [*Brachylaemus suis* **in Spain.**]—*Bol. Inf. Col. Vet. Esp., Supl. cient.* **5,** 477-480. **1288**

Pigs infested with *Brachylaemus suis* died in large numbers when inoculated against swine fever. R. found that mortality could be prevented by dosing the pigs with an anthelmintic some time before inoculation, and by using serum only, and never virus, for the inoculation. —A.S.

Fernando, E. F. W. (1952). *Leucochloridium ceylonicum* **sp. nov. provis., a trematode from the Ceylon jungle fowl.**—*Ceylon J. Sci.* Sect. B. **25,** 55-58. [Abst. from abst. in *Helminth. Abstr.* **21,** 39-40. (1952).] **1289**

F. described a trematode from the cloaca of *Gallus lafayetti*. Since this fluke resembled *L. japonicum* but differed from it in the extent of the vitellaria and the small size of the eggs, it was taken to be a new species and provisionally named *L. ceylonicum*.

Crusz, H. (1952). **The nature, incidence and geographical distribution of amphistome infestations in neat cattle, buffaloes and goats in Ceylon.**—*Ceylon J. Sci.* Sect. B. **25,** 59-73. [Abst. from abst. in *Helminth. Abstr.* **21,** 40. (1952).] **1290**

Of 701 slaughtered cattle, buffaloes and goats from various parts of Ceylon, 67·9% (73·1% cattle, 92·7% buffaloes and 15% goats) were infested with amphistomes. These belonged to at least four genera: *Gastrothylax, Gigantocotyle, Paramphistomum* and *Calicophoron*. Details regarding habits and habitats of the hosts were briefly discussed. The frequency and intensity of infestation with each type in respect of each type of host were discussed. Infestations of the liver with *Gigantocotyle explanatum* and of the stomach with *Gastrothylax* spp. were the commonest and the heaviest, especially in buffaloes. The infestations in cattle and goats appeared to be milder in character. While *Gastrothylax, Paramphistomum* and *Calicophoron* showed an island-wide distribution, *Gigantocotyle* was essentially a dry zone parasite. The evidence from geographical distribution lends support to Näsmark's contention, based on other evidence, that *G. explanatum* is generically and specifically distinct from *P. cervi*.

Kufs, H. (1952). Die Entstehung unbefruchteter Bandwurmeier in den Finnenmembranen, ein neues entwicklungsdynamisches Phänomen, bewiesen am Cysticercus cellulosae, Cysticercus bovis und Echinococcus cysticus. **[Development of unfertilized eggs of tapeworms in** *Cysticercus* **membranes, demonstrated in** *C. cellulosae, C. bovis* **and** *Echinococcus granulosus*.]—*Virchows Arch.* **322,** 73-83. **1291**

A study of three tapeworms and their encysted forms. K. claimed that he found within the cysts numerous unfertilized eggs which passed through several stages until they finally resembled normal proglottal eggs. Since they were grouped particularly about the scolices he suggested that they might exercise a trophic function, helping in the normal rapid development of the tapeworm. He further suggested that this observation might lead to a reconsideration of the normal conception of the encysted forms as an immature stage.—A.S.

Durie, P. H. & Riek, R. F. (1952). **The role of the dingo and wallaby in the infestation of cattle with hydatids (***Echinococcus granulosus* **(Batsch, 1786) Rudolphi, 1805) in Queensland.**—*Aust. vet. J.* **28,** 249-254. **1292**

In coastal regions of Queensland the incidence of echinococcus cysts is high (31% of 39,242 cattle, with highest incidence, 77·2%, in the south-east), but less than 1% of cysts are fertile. No *E. granulosus* were found in dogs in a district with a high incidence of cysts in cattle. Fertile cysts were found in 13 of 65 wallabies comprising several species, and 9 dingoes (*Canis dingo*) were all infested with the adult cestode, the number of worms being from 100 to 33,000. Three dingoes harboured more than 25,000 worms each. There is an illustration of a piece of small intestine from one case and maps showing the distribution of dingoes and cattle and the incidence of cysts in cattle.

Taenia serialis, T. pisiformis, T. hydatigena and *Diphyllobothrium erinacei* were reported from dingoes for the first time.

—H. McL. Gordon.

Choquette, L.-P.-E., Gayot, G. & Poul, J. (1952). Note sur les helminthes trouvés chez le chien à Alger. **[Helminth parasites of dogs**

in Algeria.]—*Arch. Inst. Pasteur Algér.* **30,** 47-50. **1293**

Autopsy and faecal examination of Algerian stray dogs showed a very high level of helminth parasitism. Worms of the following species were present in 25 dogs submitted for autopsy: *Dipylidium caninum, Taenia pisiformis, T. hydatigena, Echinococcus granulosus, Tenuiproboscis sergenti, Toxascaris leonina, Toxocara canis, Dochmoides stenocephala, Rictularia affinis* and *Spirocerca lupi*.—A.S.

FURMAGA, S. & WYSOCKI, E. (1951). Helmintofauna lisów województwa lubelskiego. [**Helminths of foxes in the Lublin region.**]—*Ann. Univ. M. Curie-Skłod.* Sect. DD. **6,** 97-123. [In Polish. English and Russian summaries.] **1294**

An account of helminths found in 68 wild foxes killed in the Lublin region. Worms affecting domestic animals were:—*Taenia crassiceps, T. hydatigena, T. taeniaeformis, T. multiceps, Toxocara canis, Uncinaria stenocephala, Trichinella spiralis* and *Capillaria plica*.

—JOHN R. MITCHELL.

UNGRÍA, C. D. & VERGANI, F. (1951). Contribución al estudio de la estrongilosis del ciego en los équidos de Venezuela. [**Strongylid worm infestation of horses in Venezuela.**]—*Bol. Inst. Invest. vet., Caracas.* **4,** No. 19. pp. 617-643. **1295**

The authors pointed out the widespread nature of subclin. strongylid worm infestation in horses and described a survey they made of its occurrence. The main body of the work consisted of detailed descriptions of the species of parasites encountered and included some excellent photographs.—T. E. GIBSON.

SPEDDING, C. R. W. (1952). **The value of the faecal egg count in sheep.**—*Vet. Rec.* **64,** 813-815. **1296**

Observations indicate that day-to-day variations in the output of trichostrongylid eggs by parasitized sheep cannot be explained by the quantitative output of faeces, nor by inaccuracies due to the technique of counting. Variation in the rate of egg-production by the worms appears to be the explanation. Where egg counting is used to detect slight variations in the level of infestation it is necessary to collect all faeces passed in 24 hours, to mix them, and to examine a sample from the mixture.—A.S.

SANDARS, D. F. (1951). **Viability of *Ascaris lumbricoides* eggs 'preserved' in formalin.** [Correspondence.] — *Nature, Lond.* **167,** 730. **1297**

Eight months after a sample of *Ascaris* eggs from faeces had been treated with hot 10% formalin, motile larvae were observed. The formalin concentration in the specimen was 6%. In another sample in a formalin concentration of 18% there was no such development.

—JAS. G. O'SULLIVAN.

CAVIER, R. & SAVEL, J. (1952). La survie *in vitro* en milieu aseptique de l'ascaris du porc, *Ascaris lumbricoides* Linné 1758. [**Survival of *A. lumbricoides in vitro* under aseptic conditions.**]—*C. R. Acad. Sci., Paris.* **234,** 1403-1405. **1298**

Of various antiseptics, sulphonamides and antibiotics tested for their efficacy in maintaining aseptic cultures of *A. lumbricoides,* adiazine and gantrisine were effective and allowed max. survival time.—M. L. CLARKE.

SPRENT, J. F. A. (1952). **Anatomical distinction between human and pig strains of *Ascaris*.** [Correspondence.]—*Nature, Lond.* **170,** 627-628. **1299**

The denticles from 50 human ascaris were small and had concave edges, those of pig ascaris being larger and straight-edged.

—BERYL A. KAY.

STUDER, A. & FUST, B. (1951). Durch parenterale Behandlung mit Askaridenextrakt ausgelöste Gewebs- und Bluteosinophilie beim Meerschweinchen und ihre Beeinflussung durch Cortison. [**Influence of cortisone on blood and tissue eosinophilia in g. pigs caused by parenterally administered extract of ascarids.**]—*Z. Hyg. InfektKr.* **133,** 327-343. **1300**

The single s/c injection and later multiple i/m injection of an aqueous extract of ascarids into g. pigs produced a blood and tissue eosinophilia respectively. The former was reduced and the latter completely checked by cortisone, which also mitigated shock symptoms.

—M. L. CLARKE.

ESSERMAN, H. B. (1952). **The mode of action of phenothiazine as an anthelmintic. II. Phenothiazine in the intestinal fluid and nematode parasites of treated animals.**—*Aust. J. sci. Res.* Ser. B. **5,** 485-495. [For part I, see *V.B.* **22,** 165.] **1301**

The investigations indicate that phenothiazine and not its oxidation derivatives is the anthelmintic agent. When extracts of intestinal fluid from rats and chickens dosed with phenothiazine were analysed by means of paper chromatography and microionophoreses with the use of ^{35}S-labelled phenothiazine, only phenothiazine was detected; it appeared to be attached to a fatty substance from which it could

not be separated by acid or alkaline hydrolysis. Under anaerobic conditions *in vitro* the fatty complex did not appear and only phenothiazine itself was detected. When *Ascaridia galli* was exposed to radio-active phenothiazine *in vivo*, 10% of the ^{35}S recovered was in the acid-soluble fraction of the tissues and 68% in the alcohol-soluble fraction. The worms contained the fatty complex with the drug but no oxidation products were detected. The fatty complex in extracts of gut contents penetrated *A. galli in vitro* more slowly than a suspension of the pure drug.—H. McL. Gordon.

Olds, R. J. (1952). *Gnathostoma spinigerum* **(Owen, 1836) in cats in North Queensland.**—*Aust. vet. J.* **28**, 124-126. **1302**

G. spinigerum was found in five cats. In two, eggs were found in the faeces but often there is no connexion between the tumour cavity and the lumen of the stomach. Immature worms were found in the wall of the stomach, colon, diaphragm, gastro-splenic ligament, lung and liver. Liver lesions were present in all cases.
—H. McL. Gordon.

Chabaud, A. G. (1952). Le genre *Dipetalonema* Deising 1861; essai de classification. [**Classification of the genus** *Dipetalonema*.]—*Ann. Parasit. hum. comp.* **27**, 250-285. **1303**

Using the characters of the anterior end of the adult it was possible to delimit the genus, establish synonyms and find out the closely related genera. *Acanthocheilonema, Tetrapetalonema Loxodontofilaria* and *Breinlia* are taken as synonyms. The genus shows all forms of development from primitive spirurid through primitive filarid to highly specialized filarid types.—Jas. G. O'Sullivan.

Supperer, R. (1952). Über das Vorkommen der Filarie (s.l.) Onchocerca gutturosa Neumann in Rindern in Österreich und ihre Entwicklung in der Kriebelmücke Odagmia ornata Mg. [*Onchocerca gutturosa* **in cattle in Austria and its development in** *Simulium ornatum*.]—*Wien. tierärztl. Mschr.* **39**, 173-179. [English, French and Italian summaries.] **1304**

A first record of *O. gutturosa* from cattle in Austria. Development in *S. ornatum* was described; its duration is dependent on temperature variations.—M. L. Clarke.

Shoho, C. (1951). **The pathology of setariasis in Japan and its significance in veterinary and medical science.**—*Jap. J. exp. Med.* **21**, 449-462. [In English.] **1305**

This article will be of particular interest to a wide range of readers as it gives in English some account of the work of the Japanese Commission on Lumbar Paralysis of sheep and goats in Korea. The reports of that commission were published in Japanese and are largely unknown to Western science. The lesions found by the workers of the Commission in sheep in Korea, by Emoto in goats in Japan, by Innes in goats from Ceylon and by Oguni in foals are all of the same nature, namely a colliquative necrosis in the grey matter and in the white matter plus classical Wallerian degeneration in the white matter. There is also an inflammatory response with vascular cuffing by eosinophiles, lymphocytes and plasma cells. The final stages are those of cavitation and sclerosis.

The possible significance of wandering nematodes in the aetiology of neurotropic virus diseases of man and animals is discussed. The different behaviour of *Setaria digitata* in an abnormal host from that which occurs in its natural host is also discussed. There is a valuable bibliography.—M.C.

Van Cleave, H. J. (1952). **Parasitological reviews. Some host-parasite relationships of the Acanthocephala, with special reference to the organs of attachment.**—*Exp. Parasit.* **1**, 305-330. **1306**

The author described the characteristics of the phylum Acanthocephala and discussed their significance. The greater part of the article was devoted to a review on the proboscis of the worm, the development of which was described and illustrated, together with the variations which occur among the various species.
—D. W. Jolly.

See also absts. **1321** (strongylosis in deer); **1429** (report, U.S.A.).

SPONTANEOUS AND TRANSMISSIBLE NEOPLASMS AND LEUCAEMIAS [INCLUDING FOWL PARALYSIS]

Christoph, H. J. & Pallaske, G. (1952). Beitrag zur Leukose des Hundes. [**Leucosis in the dog.**]—*Mh. VetMed.* **7**, 1-4; 26-31. **1307**

Myeloid leucaemia was diagnosed in two dogs by haematological examination. One was treated with X-rays but failed to respond. A detailed autopsy of both animals showed infiltrations in various organs of immature cells of lymphoid type and no evidence of myeloid proliferation such as was anticipated.
—E. G. White.

CARR, J. G. (1952). **The leucosis complex.**—*World's Poult. Sci. J.* **8**, 276-280. 1308

In a general discussion C. stated that carriers of infection commonly occur in this group of diseases. In carriers the disease may become overt as a result of comparatively minor disturbances such as injury resulting from fighting. He was convinced that infection does not occur by contact, nor does it occur by feeding fowls with material rich in virus. For infection to occur actual inoculation of the virus is necessary and C. maintained that blood-sucking parasites such as red mites, mosquitoes, fleas and midges are of great importance in the transmission of infection. He also maintained that the amount of virus present in carriers depends on the age of the birds, being very much higher in young birds; therefore chicks hatched from pullets' eggs are more heavily infected than chicks from eggs laid by hens in the proportion of 25:1.

[While no experimental data were included in this paper C. did produce circumstantial evidence to support his belief that insect transmission is an important factor.]—M.C.

GORET, P., JOUBERT, L. & DUMAS, R. (1951). "L'oeil de verre" chez la poule neurolymphomatose à seule localisation oculaire. [**Fowl paralysis with lesions only in the eye.**]—*Bull. Soc. Sci. vét. Lyon.* **53**, 119-126. 1309

A conventional description of ocular lymphomatosis containing no new information.

—D. LUKE.

See also absts. **1322** (incidence of neoplasms in dogs).

NUTRITIONAL AND METABOLIC DISORDERS

VARDIMAN, P. H. (1952). **Experimental feeding of senecio silage to calves.**—*J. Amer. vet. med. Ass.* **121**, 397-400. [Abst. from author's summary.] 1310

Silage which is non-toxic to calves can be made from *Senecio Riddellii.* Blackstrap molasses must be added to the green, chopped plants to ensure formation of silage. Animals fed this silage do not eat as much salt as those receiving the same feed without the silage. This is assumed to be due to the presence of considerable quantities of sodium chloride along with other minerals. It is postulated that this high salt and mineral content of *S. Riddellii* plants may cause cattle to eat these poisonous plants on the range. The feeding of salt and mineral mixtures under such conditions is therefore recommended.

MCCLYMONT, G. L. & DUNCAN, D. C. (1952). **Studies on nutrition of poultry. III. Toxicity of grain sorghum for chickens.**—*Aust. vet. J.* **28**, 229-233. [Abst. from authors' summary.] 1311

Thrashed sorghum, when constituting 28–63% of rations for chickens, depressed growth by up to 50% with the higher levels and tended to increase the mortality rate. Depression in growth could continue up to 26 weeks of age. It was concluded that a toxic factor is responsible.

FRENCH, M. H. (1952). **Mineral deficiencies in farm livestock.**—*E. Afr. agric. J.* **18**, 4-8. [Abst. from author's summary.] 1312

A general review of the mineral deficiencies affecting livestock in East Africa, with practical measures undertaken to remedy them.

EATON, H. D., HELMBOLDT, C. F., AVAMPATO, J. E., JUNGHERR, E. L. & DOLGE, K. L. (1952). **Blood levels of ascorbic acid and vitamin A during vitamin A depletion and effect of administration of ascorbic acid during terminal vitamin A depletion in the dairy cow.**—*J. Dairy Sci.* **35**, 607-614. 1313

Symptoms of hypovitaminosis A in young calves are not alleviated by ascorbic acid, though depressed blood levels of this latter vitamin increase.—JOHN SEAMER.

RONNING, M. & KNODT, C. B. (1952). **The rate of absorption of vitamin A natural esters and of carotene by male Holstein calves as measured by changes in blood plasma levels.**—*J. Dairy Sci.* **35**, 320-323. 1314

Single or repeated doses of carotene do not influence plasma content of vitamin A; this can only be increased permanently by repeated doses of vitamin A.—JOHN SEAMER.

FORBES, R. M. & HAINES, W. T. (1952). **The riboflavin requirement of the baby pig. I. At an environmental temperature of 85°F. and 70% relative humidity.**—*J. Nutr.* **47**, 411-424. [Abst. from authors' summary.] 1315

Forty-two piglets were utilized in a study of the riboflavin requirement at 85°F. and 70% relative humidity. The basal "synthetic milk" diet was supplemented with varying levels of riboflavin, and the response was compared with the same diet supplemented with an abundant quantity of riboflavin. It was concluded that the requirement of piglets, maintained under the conditions of this experiment, for riboflavin lies between 1·5 and 2·0 μg. per g. of feed dry matter. The rectal temperature of piglets kept

under these conditions rose progressively from 102·8°F. to 104·8°F. during the eight weeks of the experiment.

ROBINSON, K. L., COEY, W. E. & BURNETT, G. S. (1952). **Some effects of procaine penicillin and of certain vitamin supplements on food consumption and live-weight gain of pigs.**—*J. Sci. Fd Agric.* **3**, 448-454. [Abst. from authors' summary.] **1316**

Condensed fish solubles, vitamin B_{12} concentrates, a riboflavin concentrate and procaine penicillin were fed to pigs. Live-weight gains, food consumption and efficiency of food utilization were increased by procaine penicillin. The effect of the antibiotic on live-weight increase was highly significant both with all-vegetable diets and with diets containing animal protein, over the range 40-100 lb. live weight, when fed to pigs which had received a pre-experimental all-vegetable ration and which were scouring at the outset.

ADLER, H. E., HAMILTON, C. M. & CARVER, J. S. (1952). **An unsuccessful attempt to treat avian monocytosis with antibiotics.**—*Vet. Med.* **47**, 456-458. [Authors' summary modified.] **1317**

Aureomycin administered in the feed at the rate of 100 p.p.m. did not significantly increase the weight gains of birds affected with avian monocytosis when compared with untreated controls. Oral administration of 100 mg. of aureomycin did not prevent death of some affected birds.

Under field conditions, terramycin administered at 50, 75, and 200 p.p.m. of the drinking water to groups of chickens with symptoms of avian monocytosis did not prevent a marked reduction in egg production nor prevent mortality. Terramycin administered at the rate of 25 p.p.m. of the drinking water to two groups of laying fowls five days prior to the first symptoms of disease did not prevent the occurrence of the disease.

RINDFLEISCH-SEYFARTH, M. (1952). Die durch fischmehlhaltiges Futter und ungeeignete Arzeimittel verursachten Schäden bei Hühnern. **[Nutritional and metabolic disturbances in fowls caused by fish meal and some unsuitable drugs.]**—*Berl. Münch. tierärztl. Wschr.* **65**, 89-91. **1318**

Certain samples of fish meal have been found to be very harmful to fowls in Germany. The high content of protein increases the production of uric acid and the high sodium chloride concentration causes disturbances of water metabolism. The typical clinical symptoms are arrest of growth, cessation of egg-laying and intense thirst. P.M. findings comprise kidney affections and degeneration of the ovaries.

—H. BEHRENS.

GARM, O. (1950). Undersøkelser over paresis puerperalis, paraplegia ante partum, eclampsia puerperalis og gresstetani hos ku. Foreløbig meddelelse. **[Puerperal paresis, paraplegia *ante partum*, puerperal eclampsia and grass tetany in cows. Preliminary report.]**—*Nord. Vet.-Med.* **2**, 751-764. [In Norwegian. English and German summaries. Abst. from English summary.] **1319**

These conditions are associated with eosinopenia, lymphocytopenia and neutrophilia indicating an increased adrenocortical activity. In the P.M. examinations carried out (in the cases of puerperal paresis and puerperal eclampsia) there was hypertrophy of the adrenal cortex and of the pituitary gland. Histological examination indicated increased adrenocortical hormone production and increased activity of the basophile cells of the anterior pituitary.

G. discussed the effect of increased adrenocortical hormone production on mineral metabolism. The conditions named in the title are considered to be diseases of adaptation (Selye).

—H. BOYD.

See also absts. **1281** (immunity and metabolic rate); **1343** (antidotal efficacy of vitamin B_{12} in cyanide poisoning); **1432** (food hygiene).

DISEASES, GENERAL

CORDIER. (1952). Aspect général de la pathologie animale en Tunisie. Ses incidences sur les observations et les recherches du laboratoire. **[Diseases of livestock in Tunisia.]**—*Maroc méd.* **31**, 604-615. **1320**

A general review of the diseases of animals in Tunisia. The main diseases are discussed *seriatim*, with comments on salient features as they occur in that territory, largely in the course of the activities of the Institut Arloing, Tunis. Hard pad disease is regarded as a variant of dog distemper. Special interest attaches to the experience of some of the conditions dealt with on account of their manifestations in North Africa, notably *Brucella melitensis* infection and leishmaniasis of dogs, piroplasmosis and others.

BOUVIER, G., BURGISSER, H. & SCHNEIDER, P. A. (1952). Observations sur les maladies du gibier, des oiseaux et des poissons en 1951. **[Diseases of game, birds and fish in Switzerland in 1951.]**—*Schweiz. Arch. Tierheilk.* 94, 475-479. [In French.] 1321

A short summary of 309 autopsies, with notes on ibex, deer, chamois, roe deer, hares, squirrels and foxes. High mortality was noted among roe deer of the Chaumont region which were heavily parasitized by strongyles of the intestine and lung.—ROY MACK.

ANDRADE DOS SANTOS, J. (1951). Notas sôbre a anatomia patológica dos tumores e das moléstias infecciosas do cão. **[Incidence of neoplasms and of infective diseases in dogs.]** —*Rev. milit. Rem. Vet., Rio de Janeiro.* 11, 141-148. 1322

The author has classified a series of 218 canine tumours, examined at the Instituto de Biologia Animal, Rio de Janeiro. He gave a short description of the commoner types.

The infectious diseases encountered most often were distemper, leptospirosis, TB., toxoplasmosis, *Histoplasma capsulatum* infection and rabies.—I. W. JENNINGS

SPÖRRI, H. (1952). Formveränderungen des Pferde-Elektroventrikulogrammes. **[Electrocardiography in horses.]**—*Rep. XIVth Int. vet. Congr.* 3, 289-297. [In German. English and French summaries.] 1323

It is considered that limb leads are unsatisfactory for horses and that the three leads required for judging the propagation of the excitatory wave are Lead I, right prescapular region —croup; Lead II, right prescapular region—apical heart region; and Lead III, croup—apical heart region.

Abnormal T waves accompany various diseases such as respiratory and digestive disturbances, jaundice, nephritis etc. and may still be found after the clinical symptoms have disappeared. E.C.G. records should be taken after exercise as they may show evidence of myocardial disease which would not be seen in the resting E.C.G.—J. A. NICHOLSON.

VAN ZIJL, W. J. (1952). Een geval van rechter bundeltakblock bij het paard. Vergelijking van het rechter bundeltakblock bij het paard, de hond en de mens. **[Electrocardiographic study of atrioventricular bundle block in a horse.]**—*Tijdschr. Diergeneesk.* 77, 417-422. [English, French and German summaries.] 1324

An account of atrioventricular bundle block in an anaemic 8-year-old cart-horse; there was important axis deviation to the left (−125°) and prolonged Q.R.S. complex (0·32 sec.). The author gave a comparative account of the condition in horses, dogs and human beings.

—C. A. VAN DORSSEN.

GORDIN, R. (1952). **Toxic granulation in leukocytes. Development and relation to cloudy swelling.**—*Acta med. scand.* Suppl. No. 270. pp. 50. [In English.] 1325

G. reviewed the literature on the structure of normal and damaged neutrophile leucocytes. The origin of toxic granulation in leucocytes was studied in patients with various diseases and experimentally. In apparently normal, living neutrophile granulocytes coarse granules can be produced in the cytoplasm by slight injury to the cells *in vitro;* these granules increase in size with the length of exposure to the noxious influence. They are not firm particles, but droplets. The structure of cells of organs with cloudy swelling is similar to that of injured granulocytes.—W. R. BETT.

GARNER, R. J. (1952). **Serum alkaline phosphatase in cattle in health and disease.**—*J. comp. Path.* 62, 287-291. [Author's summary modified.] 1326

The normal range of serum alkaline phosphatase in 294 African Zebu cattle over 2 years old was 5·8 to 24·2 King-Armstrong units, with a mean value of 11·8 units. Although significant deviations from normal were encountered in cases of severe diffuse liver damage, the wide range in normal animals prohibits the use of a serum alkaline phosphatase as an indicator of hepatic dysfunction. The main channel of excretion is believed to be *via* the bile and the failure to obtain an increase in serum alkaline phosphatase in obstructive jaundice is considered to be due to incomplete occlusion of the biliary passages.

I. GARNER, R. J. (1952). **Disturbances in carbohydrate metabolism in cattle associated with liver disease.**—*J. comp. Path.* 62, 292-299. 1327

II. GARNER, R. J. (1952). **Flocculation tests in the detection of liver disease in cattle.**—*Ibid.* 300-305. 1328

III. GARNER, R. J. (1952). **Dye excretion tests in the detection of liver disease in cattle.**—*Ibid.* 306-310. [Author's summaries modified.] 1329

I. The rate of removal of i/v injected galactose from the blood of normal cattle and cattle with experimentally produced liver damage was studied. The rate of glycogenesis from galactose in cattle appeared to be about half

that in man. Intravenous galactose stimulated an increase in the blood glucose level in normal cattle similar to that seen in the human diabetic. The significance of this and other relevant findings was discussed in the light of present knowledge of intermediary metabolism in ruminants.

The validity of the adrenalin-response test as an indicator of the glycogen storage capacity of the liver was questioned. The application of this test to cattle was described.

It was concluded that the galactose tolerance test and the adrenalin-response test, with suitable modification, could be applied to the detection of hepatic dysfunction in cattle.

II. A number of flocculation tests were applied to the detection of liver disease in cattle, most of which revealed changes in serum proteins in cattle as in man.

It was considered that Britton's modification of the Takata-Ara test could serve as a useful indicator of the existence of hepatic disease in cattle.

III. The rates of removal of phenoltetrachlorophthalein and Rose Bengal from the blood of cattle were determined in cattle with and without liver damage. It was concluded that dye excretion tests were unreliable as indicators of hepatic disease in cattle.

PLATT, H. (1952). **Morphological changes in the cardiovascular system associated with nephritis in dogs.**—*J. Path. Bact.* **64**, 539-549. [Author's summary modified.] **1330**

In 8 dogs with acute and 24 with chronic nephritis the cardiovascular changes observed were of two main types: (1) those due to hypertension, seen only in dogs with the chronic type; (2) necrotising lesions in the heart and great vessels, mainly in dogs with the acute type, and scars at these same sites in dogs with the chronic type. Cardiac hypertrophy was present in 6 out of 16 dogs with chronic nephritis and the LV:RV ratio was higher in chronic nephritis cases generally than in normal dogs. Acute necrotising lesions affecting mainly the left auricle, aorta and pulmonary artery were found in 5 out of 8 cases of acute nephritis.

It was concluded that hypertension is an important feature of chronic nephritis in the dog, but that the necrotising cardiovascular lesions seen in acute nephritis were probably not of hypertensive origin but were identical with those occurring in experimental renal failure in the dog.

HARTHOORN, A. M. (1953). **The effect of various forms of fluid replacement during circulatory imbalance in the dog. I. The effect of infusions of normal saline solution, gelatine solution and protein hydrolysate solution on the blood pressure, etc., and the survival rate, in conditions of post-operative shock. II. The effect on the blood pressure and circulatory plasma volume of the infusion of isotonic solutions of pure heterologous (bovine) albumin solution, compared to that of homologous and heterologous plasma. III. The effect of injections of concentrated solutions of pure heterologous (bovine) albumin on the blood pressure, circulatory plasma volume etc., and on the survival rate during hypotension and shock.**—*Vet. Rec.* **65**, 35-40, 51-57 & 70-74. [Absts. from author's summaries.] **1331**

I. The effect of physiological saline sol., 6% gelatin sol. as well as protein hydrolysate on the manifestations of shock and the survival rate of a number of dogs in a state of post-operative shock, was demonstrated. The use of physiological saline sol. in general vet. practice was discussed.

II. The use of homologous plasma for the treatment of shock in the dog can be adequately replaced by the use of isotonic heterologous (bovine) albumin sol.

III. Purified bovine albumin free from traces of globulin, was found to be a safe and effective agent for the therapy of hypotension and shock in the dog. The place of crystalloid solutions as an essential adjunct to the therapy of shock with concentrated colloid sol. was studied.

BOLOTTI, O. (1950). Contributo allo studio della litiasi pancreatica nel vitello. **[Pancreatic calculus in a calf.]**—*Atti Soc. ital. Sci. vet.* **4**, 352-357. [English and German summaries.] **1332**

Numerous calculi of variable size and shape were present in both the large and small pancreatic ducts of a 6-month-old calf. No other lesions were noted and the animal was in good condition.—J. A. NICHOLSON.

JAQUES, R. (1952). **Acute pulmonary oedema and histamine.**—*Brit. J. exp. Path.* **33**, 484-490. [Author's summary modified.] **1333**

When acute pulmonary oedema is induced in rats by i/p inj. of ammonium chloride a marked fall of the histamine of the lung tissue itself occurs. The released histamine does not enter the pulmonary oedema fluid in appreciable amounts, but seems to account for the increase in arterial blood histamine. The main bronchi of the normal rat lung contain 2–4 times as much histamine as the lobes, and their histamine content remains unchanged in this type of pulmonary oedema.

DELAUNEY, A., FOUCQUIER, E. & BARDON, Y. (1950). Sur la diapédèse el l'eodème inflammatoires phénomènes dissociables. [**Inflammatory oedema and diapedesis.**]—*C. R. Acad. Sci., Paris.* **230,** 1705-1706. 1334

Purified polysaccharide derivatives from bovine embryonic tissues gave rise to a marked local reaction when injected i/d into g. pigs. Similarly, the polysaccharides increased capillary permeability.—G. V. LAUGIER.

WEINBREN, K. (1952). **The pathology of hepatitis.**—*J. Path. Bact.* **64,** 395-413. 1335

This paper is not, as its title may suggest, a discourse on the pathology of all forms of hepatitis, but a description of the histological features seen in 136 specimens of liver biopsy material taken from 107 patients exhibiting clinical evidence of hepatitis. An attempt was made to correlate the histological features with the level of serum bilirubin and with the ultimate course of the disease.—L. M. MARKSON.

POISONS AND POISONING

ANON. (1952). **Chlorinated naphthalene compounds cause X-disease.**—*Jensal J.* Oct. pp. 8-9. 1336

It is stated that chlorinated naphthalene commonly found in lubricating oils, wood preservatives and insecticides has been demonstrated to be one cause of hyperkeratosis in cattle. Vapours from these substances may also produce the disease. Pelleted feeds contaminated with lubricating oil from the pellet-making machinery have caused the disease.—M.C.

VALERI, H. & GALLO, P. (1951). Posibilidad de hallar en las orinas y contenidos estomacales productos nitrogenados solubles en los solventes orgánicos, cloroformo, éter etílico y xileno. [**Possible errors in tests for alkaloids in the urine of horses and the stomach contents of cattle.**]—*Rev. Med. vet., Caracas.* **10,** 65-71. [English summary and conclusions.] 1337

The authors discussed the effect of certain nitrogenous substances, of the nature of vitamins, which, in some circumstances, affect the accuracy of alkaloid tests applied to the urine or stomach contents of horses and cattle.—A.S.

ATERMAN, K. & AHMAD, N. D. (1953). **Cortisone and liver function.**—*Lancet.* **264,** 71-73. [Authors' summary copied *verbatim.*] 1338

Cortisone has little effect on the bromsulphalein-retention test in the normal rat, but produces considerable deterioration if given to rats treated with carbon tetrachloride for seven weeks. The histological picture showed more widespread liver damage in these rats than in a control group treated with carbon tetrachloride only. Cortisone increases the susceptibility of the rat's liver to chronic damage by carbon tetrachloride.

KUMMER, H. (1952). Vergiftungen bei Pferden durch Adonis in Luzerneheu. [*Adonis aestivalis* **poisoning in horses.**]—*Tierärztl. Umsch.* **7,** 430-431. 1339

A number of horses given lucerne hay containing up to 17% of *A. aestivalis* either refused the hay or became ill after eating it. The plant appears to be more prevalent than formerly and is definitely poisonous, having a digitalis-like action.—J. A. NICHOLSON.

GARDNER, C. A. (1952). **The wedge-leaved rattlepod (*Crotalaria retusa* L.) A poison plant of tropical Australia.**—*J. Dep. Agric., W. Aust.* **1,** 641-647. 1340

Investigations, which are still in progress, have shown that, of the numerous species of *Crotalaria* found in the Kimberley Division of Western Australia, *C. retusa* is probably the major cause of "Kimberley horse disease". G. described the plant, its habitat and range, and discussed methods of minimizing losses from this disease.—I. SOMMERVILLE.

SCHULERT, A. R. & LEWIS, H. B. (1952). **Experimental lathyrism.**—*Proc. Soc. exp. Biol., N.Y.* **81,** 86-89. [Abst. from authors' summary.] 1341

A comparison of the toxicity for the rat of the seeds of 5 spp. of *Lathyrus*. The substances concerned were not identified, but the authors were able to effect a partial purification of the toxic principle of *L. sylvestris Wagneri*.

SMITH, S. B., DELAPLANE, J. P. & WILEY, W. H. (1952). **The effect on production and hatchability of feeding laying pullets sulfaquinoxaline at the 0·033 percent level.**—*Poult. Sci.* **31,** 679-680. [Authors' summary modified.] 1342

The effect on production and hatchability of feeding laying pullets sulphaquinoxaline at the 0·033% level continuously in mash was studied by comparing 2 pens of 110 Rhode Island Red pullets mated with 12 cockerels of the same breed. One pen received the sulphaquinoxaline fed continuously in the mash while the other received the same feed without the

drug. Production, fertility and hatchability were slightly lower in the pen receiving the sulphaquinoxaline. However, statistical analysis of the production records showed these differences to be insignificant. Therefore, it was concluded that sulphaquinoxaline can be fed at the 0·033% level in mash continuously without significantly affecting production, fertility or hatchability in laying hens.

MUSHETT, C. W., KELLEY, K. L., BOXER, G. E. & RICKARDS, J. C. (1952). **Antidotal efficacy of vitamin B_{12}a (hydroxocobalamin) in experimental cyanide poisoning.**—*Proc. Soc. exp. Biol., N.Y.* **81,** 234-237. [Authors' summary and conclusions modified.] **1343**

Vitamin B_{12}a (hydroxo-cobalamin), but not vitamin B_{12} (cyano-cobalamin), was found capable of preventing in mice the toxic symptoms and death which normally follow the administration of cyanide. When injected into mice exhibiting complete respiratory arrest and coma due to cyanide poisoning, vitamin B_{12}a effected rapid recovery of most animals.

See also absts. **1256** (treatment of distemper with snake venom); **1310** (*Senecio* silage); **1311** (toxicity of sorghum); **1423-1425** (reports, Australia).

PHARMACOLOGY AND GENERAL THERAPEUTICS

(For treatment of specific infections see under the appropriate disease)

BOYD, A. M., FLETCHER, F. & RATCLIFFE, A. H. (1953). **Supportive therapy. An improved type of dextran.** — *Lancet.* **264,** 59-63. [Authors' summary modified.] **1344**

The authors described the use of macromolecular substances in supportive therapy. Since it is now possible to prepare a solution of such substances possessing advantages over plasma itself, the term "plasma substitute" should be discarded. Since the primary use of these substances is for the restoration or maintenance of the circulating blood volume the term "blood-volume restorer" is suggested. The criteria for an effective blood-volume restorer are: ease of infusion, freedom from undesirable effects, reproducible composition under manufacturing conditions, elimination from the body, and maintenance of a blood level of not less than 50% of the amount infused at the end of 24 hours. These criteria could only be met by the development of a new type of dextran solution. The authors described the steps in the development of the new material and discussed its clinical advantages.

I. BOURNE, J. G., COLLIER, H. O. J. & SOMERS, G. F. (1952). **Succinylcholine (succinoylcholine), muscle-relaxant of short action.**—*Lancet.* **262,** 1225-1229. **1345**

II. EVANS, F. T., GRAY, P. W. S., LEHMANN, H. & SILK, E. (1952). **Sensitivity to succinylcholine in relation to serum-cholinesterase.**—*Ibid.* 1229-1230. **1346**

I & II. The drug was safe and effective in 546 human patients, the action lasting about 8 min. It is hydrolysed only by the plasma pseudoacetylcholinesterase, but is a competitive inhibitor of acetylcholine hydrolysis by both this enzyme and the true red cell acetylcholinesterase. The duration of succinylcholine is a function of the speed of its removal from the neuromuscular junction by pseudoacetylcholinesterase.—MALCOLM WOODBINE.

GRAULICH, R. (1952). Onderzoekingen over de antibiotische en antipyretische werking van de semicarbaziden. **[Antibiotic activity of semicarbazides.]**—*Vlaam. Diergeneesk. Tijdschr.* **21,** 79-86. [English, French and German summaries.] **1347**

A study was made of a series of semicarbazides and thiosemicarbazides. The active principle against Gram-negative micro-organisms seems to be the amino-nucleus, against acid-fast micro-organisms the benzol-nucleus. Apart from their antibiotic action these preparations act as antipyretics through their influence on the adrenal glands and on metabolism in general.

—C. A. VAN DORSSEN.

EADS, F. E., GLAZKO, A. J., WOLF, L. M., EHRLICH, J. & GALBRAITH, M. (1952). **Blood level studies in dogs following the administration of chloromycetin.**—*Amer. J. vet. Res.* **13,** 204-206. **1348**

Microbiologically and colorimetrically determined serum levels of chloromycetin indicated that 150 mg./kg. body wt. daily, in 3 or 4 doses, will maintain therapeutic levels of the drug in the dog.—JOHN SEAMER.

HALPERN, B. N., BENACERRAF, B. & BRIOT, M. (1952). **The roles of cortisone, desoxycorticosterone, and adrenaline in protecting adrenalectomized animals against haemorrhagic, traumatic, and histaminic shock.**—*Brit. J. Pharmacol.* **7,** 287-297. **1349**

In haemorrhagic shock in rats, cortisone is more effective than deoxycortone in maintaining blood pressure and body temperature, but both are equally effective in protecting from crush

syndrome. In histaminic shock in mice, cortisone increases the tolerance 5-fold and adrenalin 10-fold whereas deoxycortone does not modify the high sensitivity of mice (adrenalectomized) to histamine.—MALCOLM WOODBINE.

TOOHEY, M. (1952). **Antagonism of anticoagulants dicoumarol, tromexan, and phenylindandione by vitamin K_1.**—*Brit. med. J.* Sept. 27th, 687-690. [Author's summary copied *verbatim.*] **1350**

In 18 patients, vitamin K_1, in a single oral dose of 500 mg., was completely effective in restoring a safe prothrombin level after a severe and prolonged prothrombin deficiency due to such anticoagulant drugs as dicoumarol, tromexan, and phenylindandione. This effect was evident within eight hours, and the action of the vitamin was apparent within four hours. In three cases of frank haemorrhage due to anticoagulant drugs, an oral dose of vitamin K_1 was in itself sufficient to stop bleeding in a matter of hours.

STEEL, J. D. (1952). **The equine electrocardiogram with particular reference to certain anaesthetic agents.**—*Rep. XIVth Int. vet. Congr.* **3**, 306-311. [French and German summaries.] **1351**

Fifteen horses were anaesthetized 53 times with various drugs, their effect on the heart being judged by E.C.G. records. When β-naphthoxyethanol was injected slowly, the heart rate increased from 50 to 90 per min. and changes were seen in the P and T waves and RS-T junctions. With rapid injections, the drug produced a marked tachycardia with rates up to 160–180 per min. Chloroform caused variations in the QRS complex and thialbarbitone, chloral hydrate, magnesium sulphate and pentobarbital sodium caused changes in the T waves with heart rates up to 100 or in the case of chloral hydrate up to 130 per min.

—J. A. NICHOLSON.

STORY, P. (1952). **Testing of skin disinfectants.**—*Brit. med. J.* Nov. 22nd, 1128-1130. [Abst. from authors' summary.] **1352**

S. described a method of testing skin disinfectants which included the use of penicillin-resistant test organisms with penicillin in culture medium to suppress natural skin flora, and counteraction of the bacteriostatic effect of quaternary ammonium compounds with sterile skim milk. Several disinfectants were compared by their ability to kill *Staphylococcus pyogenes, Bacterium coli, Pseudomonas pyocyanea,* and *Proteus vulgaris* on the skin. 70% industrial spirit alone or with 1% iodine or cetrimide killed all test organisms within 30 sec. 10% cetrimide or 1:1,000 dynium chloride in 70% spirit and 1% aqueous iodine were effective within 30 sec. against *Staph. pyogenes* and *Ps. pyocyanea* respectively; some other disinfectants were only partially effective.

See also absts. **1115** (joint-ill); **1118** (antibiotic synergism and antagonism); **1132, 1135, 1136** and **1141** (isonicotinic acid hydrazide); **1137** (action of drugs on intracellular tubercle bacilli); **1144** (mastitis); **1150** and **1160** (bacitracin); **1160** (pasteurellosis); **1195** (antifungal antibodies); **1197** (sulphonamides); **1198** (cortisone); **1201-1202** (trypanocidal substances); **1203** (antrycide); **1207** (blackhead); **1213** (*Theileria* infection); **1256** (treatment of distemper with snake venom); **1275** (lindane); **1282** (toxaphene); **1301** (phenothiazine); **1342** (effect of sulphaquinoxaline on pullets); **1369** (effect of drugs on passage of ingesta in dogs); **1430** (book, useful drugs).

PHYSIOLOGY, ANATOMY AND BIOCHEMISTRY

BOLOTTI, O. (1951). Ulteriori ricerche sul contenuto in istamina di secreti ed organi di bovini sani (orina, pancreas, milza, linfonodi bronchiali e mediastinici). [**The histamine content of the secretions and tissues of the ox.**]—*Atti Soc. ital. Sci. vet.* **5**, 182-186. [English summary.] **1353**

B. ascertained the following histamine values in the ox, per g. of fresh tissue: pancreas 0·2–4 μg.; spleen 0·9–7·5 μg.; caudal mediastinal lymph node 5–12 μg.; bronchial lymph nodes 3–15 μg. The urine contained 0·02 μg. per ml.—I. MARTINI.

PRENTICE, T. C., SIRI, W., BERLIN, I., HYDE, G. M., PARSONS, R. J., JOINER, E. E. & LAWRENCE, J. H. (1952). **Studies of total body water with tritium.**—*J. clin. Invest.* **31**, 412-418. [Authors' summary modified.] **1354**

Total body water was determined with tritium labelled water in 57 human beings; 20 were normal and the remainder were suffering from a variety of disease states.

Tritium appears to measure the same water volume as deuterium, averaging 2–4% higher than with antipyrine, and undergoes a similar degree of exchange with organic molecules.

The difference between antipyrin and tritium body water volumes is accounted for by exchange of tritium with protein bound hydrogen.

Body water determinations vary greatly from individual to individual, the variations in proportion reflecting for the most part variation in body fat. In pathological states where the lean body mass cannot be assumed to remain constant in composition, body water determinations are of limited value without a method for quantitating fat.

ANON. (1951). **The influence of hormones on enzymes.**—*Ann. N.Y. Acad. Sci.* **54,** 531-728. **1355**

This monograph is composed of 15 papers which were presented at a conference. They deal with the relationships of steroid hormones, insulin, thyroxin and pituitary hormones to enzyme systems. The findings suggest that hormones may influence enzyme systems in one or more ways such as by altering tissue enzyme concentrations or by functioning as a component of an enzyme system or by having direct or indirect effects on accelerators or inhibitors of enzyme systems.—J. A. NICHOLSON.

PEETERS, G. & COUSSENS, R. (1952). **The influence of the milking act on the diuresis of the lactating cow.**—*Arch. int. Pharmacodyn.* **84,** 209-220. [Abst. in *Dairy Sci. Abstr.* **14,** 923. (1952), copied *verbatim.*] **1356**

A strong diuresis was induced in lactating cows on a number of occasions by administering 45 l. of tap water at 38°C. by stomach tube. When the cows were milked during these periods, a pituitary-type inhibition of diuresis was observed. The intensity of this inhibition was very variable, and was most marked when the animals were in a calm state during milking; if they were restless it was absent or barely noticeable. Milk ejection was always normal, indicating that the antidiuretic principle of the posterior pituitary is not the effective agent in evoking milk ejection. The most marked inhibitory effects were exactly reproduced by injecting 0·01 I.U. total posterior pituitary extract into the udder; these injections had no stimulating effect on milk ejection in spite of their oxytocic content.

FIENNES, R. N. T.-W.- (1952). **Diurnal variations in the blood picture of cattle.** [Correspondence.] — *Nature, Lond.* **170,** 934-935. **1357**

Under African conditions the composition of bovine blood undergoes daily marked variations which can be related to the prevailing specific gravity of the plasma.—JOHN SEAMER.

KEHAR, N. D. & MURTY, V. N. (1951). **Physiological studies on the blood of domestic animals. II. Male buffaloes.**—*Indian J. vet. Sci.* **21,** 13-16. **1358**

The authors studied the haematological and inorganic constituents of the blood of male buffaloes and compared their values with those for Kumaoni hill bullocks, and Hariana and Dhanni (plains) bullocks.—D. N. MULLICK.

CAPE, R. D. T. (1952). **The eosinophile cells of the blood. A general review.**—*Edinb. med. J.* **59,** 374-384. **1359**

C. reviewed present knowledge about the origin and fate of the eosinophile cell, and discussed briefly the causes of an increase or decrease in the number of the cells in the circulation. Both A.C.T.H. and compound F (17-hydroxycorticosterone-21-acetate) cause eosinopenia as do other "alarm reactions" mediated through the hypothalamus. He speculated whether the initial fall in circulating eosinophiles in acute infections followed by a rise in convalescence may reflect a state of alarm followed later by the establishment of immunity.

—G. FULTON ROBERTS.

BYERS, J. H., JONES, I. R. & HAAG, J. R. (1952). **Blood hemoglobin values of dairy cattle.**—*J. Dairy Sci.* **35,** 661-667. [Abst. from authors' summary.] **1360**

The average blood Hb. value of Holstein, Jersey, Guernsey and grade cattle in this study was 11·1 g. of Hb./100 ml. of blood; the average value obtained for males did not differ significantly from that of females. Animals with low or high Hb. values generally maintained low or high values over extended periods.

Pasture feeding did not change the blood Hb. value significantly from barn feeding in a group of 20 cows studied over a period of one year. Animals fed a high-fat ration had a slightly higher blood Hb. value than those fed a low-fat ration.

There was no significant correlation of the blood Hb. of dairy cattle with age, but the average value differed statistically between the Holstein and Jersey breeds, the averages being 10·6 g. and 11·3 g. per 100 ml. respectively.

Since the blood Hb. value of normal dairy cattle varies widely, great caution should be exercised in the interpretation of the data.

GARNER, R. J. (1952). **Variations in serum protein levels in cattle.**—*J. comp. Path.* **62,** 279-286. [Author's summary modified.] **1361**

G. gave ranges for total and differential protein conc. in the serum of 54 healthy, well-fed African zebu cows at Vom, Nigeria. Serum total protein was found to increase with age, fairly rapidly for the first 5 years of life and then more slowly. This rise was due to an overall increase in serum globulin. In an adequately fed herd, bulls were found to have significantly higher total and differential serum protein levels than cows. Cattle kept under range conditions were believed to receive an inadequate protein intake. This was reflected by an increase in serum globulin and a fall in serum

albumin. No definite alterations in serum proteins were observed in cattle with liver disease, although the results presented indicated a tendency for both the globulin and albumin fractions to decrease. It is believed that changes due to a deficiency of dietary protein may mask less marked alterations due to liver disease.

I. ZWEIFACH, B. W. & SHORR, E. [Edited by.] (1951). **Factors regulating blood pressure. Transactions of the Fourth Conference February 23-24, 1950, New York, N.Y.** pp. 219. New Jersey, U.S.A.: Josiah Macy, Jr. Foundation Publications. $3.00. 1362

II. ZWEIFACH, B. W. & SHORR, E. [Edited by.] (1951). **Factors regulating blood pressure. Transactions of the fifth Conference February 15 and 16, 1951, New York, New York.** pp. 238. New York: Josiah Macy, Jr. Foundation. $3.75. 1363

I & II. These two short volumes contain the fourth and fifth of the deliberations of about twenty-five active research workers.

The theme of the fourth conference was to discuss the relationship, if any, between experimental renal hypertension and essential hypertension in man. The development of various renal, hepatic and vascular lesions as a result of various feeding and experimental procedures was discussed from a dietetic and hormonal standpoint. The action of certain substances, such as renin and serotonin, on vasomotor activity was woven into the broad framework of the causation of hypertension. During the informal discussion of the various research reports many topics of great variety and diversity were mentioned, *e.g.* whether or not hypertension has ever been spontaneous in dogs, the advantages and disadvantages of indirect blood pressure measurement, the etymology of certain terms used in pathology.

At the fifth conference the main emphasis was on the causation of arteriosclerosis. The biochemistry and histo-pathology of lipoids was considered from a number of viewpoints in relation to experimental and clinical cases, of atheroma and arteriosclerosis. Experimental hypertension in dogs and the possible role of renin in human essential hypertension were discussed further.—F. R. BELL.

SALUTINI, E. (1951). Il cateterismo del cuore destro nel cane. **[Catheterization of the right ventricle in the dog.]**—*Ann. Fac. Med. vet., Pisa.* **4,** 63-68. [English and French summaries.] 1364

Under radioscopic control a Lenègre's catheter was introduced into the right ventricle through the external jugular vein of 15 dogs. The mean pressure in the right ventricle of the dogs examined was equiv. to 25 cm. water.
—I. MARTINI.

SIKAND, R. S., NAHUM, L. H., LEVINE, H. & GELLER, H. (1952). **Ventricular excitability of the intact dog heart.**—*Yale J. Biol. Med.* **24,** 366-380. 1365

Needle electrodes recorded "unipolar" precordial electrocardiographs over the left apex, and these were used as a basis for the experiments. In anaesthetized dogs, measurements were made of the absolute, relative and total refractory periods of the base, middle and apex of the ventricular musculature. The diastolic threshold was found to increase from base to apex of ventricles, with increase in heart rate and with increase in depth of nembutal anaesthesia. The authors consider that the latter explains the effectiveness of barbiturates in abolishing ectopic rhythms.—B. G. CLARKE.

PAIVA, O. M. & RIBEIRO, P. DE A. (1948). Distância do *Torus pyloricus* á *Papilla duodeni hepatica* em bovinos mestiços de Zebu. **[Distance from the torus pyloricus to the papilla duodeni hepatica in zebu cross-bred cattle.]**—*Rev. Fac. Med. vet. S. Paulo.* **3,** 223-246. [Abst. from English summary.] 1366

Measurements of the initial portion of the duodenal tract were made on 411 zebu cross-bred cattle of known sex and age. Comparison with the findings of other workers on other breeds suggests that the distance between the duodenal opening of the bile duct and the pylorus can be correlated with total length of the intestines.—C. W. OTTAWAY.

LIEBERMAN, S., TAGNON, H. J. & SCHULMAN, P. (1952). **The *in vitro* metabolism of estrogens by the liver studied by means of a colorimetric method.** — *J. clin. Invest.* **31,** 341-345. [Authors' summary modified.] 1367

The authors described a method based on colorimetric assay for the study of metabolic action of liver and other tissue on natural oestrogen. The method permits measurement of 10–150 μg. of 17-β oestradiol, oestrone and oestriol with the sigma value of 7% in the presence of tissue. By this method it was found that 300 mg. of rat liver slices metabolize on an average of 50 μg. of oestradiol, 53 μg. of oestrone and 21 μg. of oestriol in 3 hours at 37·5°C. and at pH 7·4.

Evidence was presented that oestradiol becomes bound to liver tissue in such a way that complete hydrolysis is necessary before it can be extracted.

The end products of the reaction of liver on 17-β oestradiol are unknown but the data suggest that they do not consist solely of oestriol, oestrone or conjugated oestrogens.

ABERCROMBIE, M. & HARKNESS, R. D. (1951). **The growth of cell populations and the properties in tissue culture of regenerating liver of the rat.**—*Proc. roy. Soc.* Ser. B. **138**, 544-561. [Authors' summary slightly modified.] **1368**

Hitherto, quantitative investigation of the histology of regenerating liver after partial hepatectomy has been concerned almost entirely with changes in the parenchymal cells. It has long been known, however, that other kinds of cell within the liver take part, and that as a consequence the restored liver is nearly normally organized. A quantitative investigation has therefore been made into the behaviour of different types of cell in regenerating liver. The material consisted of histological sections and tissue cultures of livers of normal adult rats and of adult rats from which two-thirds of the liver had been removed 1, 2, 7 or 21 days previously.

Mitosis was found at some stage of the regenerative process in parenchymal cells, bile-duct cells, lining cells of the sinusoids (including von Kupffer cells), and peritoneal mesothelial cells. While the parenchymal cells showed maximum mitotic rate in the rats killed one day after operation, the other types of cell showed negligible mitosis at this time and maximum mitotic rate at two days after operation. At 21 days after operation, the total liver populations of parenchymal cells, sinusoid lining cells and bile-duct cells had all returned to a normal level.

In tissue cultures the number of cells appearing outside each explant after three days of cultivation was counted. The most important finding was that the explants from the animals killed two days after operation produced many more macrophages, fibroblasts and bile-duct cells than the explants from the other animals. Parenchymal cells were not successfully cultured. It is suggested that the results of the tissue cultures indicate changes in the mobility of the cells during regeneration, and that increased mobility may be important in the regenerative process.

FÓTI, M. & EGYED, N. (1951). **The effect of certain drugs on the passage of the stomach and bowel contents in dogs.**—*Acta vet. hung.* **1**, 115-127. [In English. Russian summary.] **1369**

An account of the rate of passage of ingesta in the dog's stomach and intestine, as recorded by radiography. The influence of atropine, morphine and acetylcholine on the intestine and valves was also studied.—JOHN SEAMER.

BRUCE, H. M. & KENNEDY, G. C. (1951). **The central nervous control of food and water intake.**—*Proc. roy. Soc.* Ser. B. **138**, 528-544. [Authors' summary modified.] **1370**

It has been suggested that food and water consumption in the rat may be co-ordinated by the hypothalamus, as closely contiguous hypothalamic centres control these functions [*V.B.* **18**, 589]. The authors investigated this possibility by a study of the effect of damaging each of the centres in turn. Lesions of the tuberal nuclei caused obesity, and in such animals the effect of reduction of water intake on food consumption was increased. Similarly, in diabetes insipidus caused by lesions in the supra-optic region, the effect of diet on water exchange was exaggerated. Variation of the chemical composition of the diet showed that the rat could maintain a constant caloric intake while varying its water consumption widely.

Adolph (1947) showed that when food and water were given to the rat together as milk, the intake was governed by calorie content alone, even though this involved drinking an excess of fluid. The authors found that in rats with diabetes insipidus, calorie content was still the determinant of the amount of milk drunk, although in severe cases the associated fluid was inadequate to prevent dehydration. If the lesion causing diabetes insipidus was extended so as to damage in addition the tuberal centre controlling food intake, limitation of milk intake did not occur, and dehydration was prevented. These experiments provide additional evidence of the activity of a hypothalamic satiety centre.

It is suggested that the hypothalamic control of food and water acceptance depends on different, though normally related, features of the diet, food acceptance on the calorie content and water acceptance ultimately on the demands imposed by the renal excretion of the products of metabolism. The apparent correlation of food and water intake in the rat does not imply central co-ordination.

GODINA, G. (1950). Richerche sulla morfologia dei neuroni viscerali negli animali domestici. **[Morphology of the visceral neurones in domestic animals (cattle, horses, sheep and goats).]**—*Arch. ital. Anat. Embriol.* **55**, 1-32. **1371**

Description of morphological peculiarities caused by aging in the neurones in the sympathetic ganglia of cattle, horses, sheep and

goats. In old animals regressive changes such as increase in the number of dendrons and the presence of vacuolations in the protoplasm are less pronounced than in man; but they appear to be more evident in cattle than in the other animal species.—I. MARTINI.

MAJNO, G. & ROUILLER, C. (1951). Die alkalische Phosphatase in der Biologie des Knochengewebes. Histochemische Untersuchungen. **[Alkaline phosphatase in the biology of bone tissue.]**—*Virchows Arch.* **321**, 1-61. 1372

An account of alkaline phosphatase in relation to bone tissue. It has only a brief activity is ossifying cells, appears during ossification in the connective tissue and cartilage and disappears after ossification. It is therefore necessary for ossification, but not for metabolism of normal adult bone cells. Phosphatase disappears from necrotic tissues after 48 hours, but is present again during regeneration. It is therefore an enzyme both for osteogenesis and for bone metabolism. During the gradual replacement process there is no phosphatase within the decomposed intercalated disc; interstitial activation therefore does not take place. During necrosis (oncosis) the enzyme is present in necrotic bone cells probably as a result of reactivation of the resting enzyme.

—H. BEHRENS.

LEAF, A. & MAMBY, A. R. (1952). **The normal antidiuretic mechanism in man and dog; its regulation by extracellular fluid tonicity.**—*J. clin. Invest.* **31**, 54-59. [Authors' summary modified.] 1373

In normal man and dog deprivation of water causes a slight rise in serum total solute concentration associated with max. concentration of the urine. Following administration of water there occurs a slight but measurable dilution of the serum. With this the urine becomes progressively more dilute reaching levels distinctly hypotonic to the extracellular fluid. When the water load administered is excreted, serum and urine total solute concentrations again arise.

Furthermore, in the dog, the presence of antidiuretic activity was demonstrable during the diuresis that followed water administration. The role of the posterior pituitary in this mechanism is indicated by persistence of dilute urine during dehydration in spite of very marked hypertonicity of the serum in a patient with posterior pituitary insufficiency. Thus it is seen that this cybernetic mechanism is ideally designed to preserve within narrow limits the total effective solute concentration of the serum.

HELWEG-LARSEN, H. F. [Translated by: AAGESEN, E.] (1952). **Nuclear class series. Studies on frequency distribution of nuclear sizes and quantitative significance of formation of nuclear class series for growth of organs in mice with special reference to influence of pituitary growth hormone.** — *Acta path. microbiol. scand.* Suppl. No. 92. pp. 139. [In English. Danish summary.] 1374

A study of the livers of normal mice, dwarfs resulting from anterior pituitary abnormality, and similar dwarfs receiving hormone supplements showed that anterior pituitary hormone appeared to play a part in the formation and development of the nuclei of hepatic cells; the nuclei in normal mice could be classified in a series according to size which the author defined as a nuclear class series. The abnormal liver cells of the dwarfs slowly became normal under the hormone treatment.—R. MARSHALL.

ELLINGER, G. M. & DUCKWORTH, J. (1950). **The influence of the ovaries on bone repair after skeletal depletion during lactation.**—*Brit. J. Nutr.* **4**, p. iv of absts. [Only abst. given. Abst. from abst.] 1375

Rats previously fed a calcium-deficient diet were used in studying the effect of ovarian hormones on the recovery of calcium reserves in the skeleton after lactation, an average daily retention/g. body wt. of 0·131, 0·091 and 0·031 mg. being found during the first, second and third weeks respectively. The rate of repair was not affected by ovariectomy or daily injections of oestrone and/or progesterone.

—K. MACFARLANE.

LOBBAN, M. C. (1952). **Structural variations in the adrenal cortex of the adult cat.**—*J. Physiol.* **118**, 565-574. [Author's summary modified.] 1376

Histological examination of the adrenal glands of 55 adult cats of both sexes revealed structural variations in the zona reticularis of the adrenal cortex which could be correlated with the sexual state of the animal. The significance of these observations was discussed and it was suggested that the zona reticularis in the cat might react as a secondary sex organ.

REINHARDT, W. O., GESCHWIND, I. I. & LI, C. H. (1951). **On the evidence suggesting a multiplicity of adrenocorticotrophic hormones: an evaluation of bioassay methods.** —*Acta endocrinol.* **8**, 393-424. [In English.] 1377

An evaluation of the results of different bioassay methods using different adrenocortico-

trophic preparations. The available data are insufficient to substantiate or to disprove the existence of a multiplicity of adrenocorticotrophic hormones.—W. R. Bett.

Koller, G. (1949). Hormone. [**Hormones.**] pp. 187. Berlin: Walter de Gruyter & Co. 2nd revised Edit. DM. 2.40. **1378**

A pocket book of reference dealing briefly but informatively with the whole field of hormone studies.

The author begins by explaining the chemical nature and manner of action of the hormones and describes the techniques used in their investigation. From this firm foundation he is able to give a useful review of the various growth substances in plants and some of the many hormones to be found in invertebrate and vertebrate animals.—A.S.

See also absts. **1381-1408** (reproduction and reproductive disorders); **1431** (book, urine and sediments).

PUBLIC HEALTH, VETERINARY SERVICES AND VETERINARY EDUCATION

Anon. (1952). [**Veterinary aims in the fifth Five Year Plan, 1951-1955, of development of the U.S.S.R.**]—*Veterinariya, Moscow.* **29,** No. 11. pp. 3-8. [In Russian.] **1379**

The directive states that the main veterinary objects are to increase the quantity and quality of farm stock and animal raw products. Greater technical knowledge and knowledge of its practical application will be required from the veterinary services. Their role will be to prevent avoidable losses, increase productivity and, as a first step, control anthrax, TB. and brucellosis. The cattle population is to be increased, chiefly on collective farms, by 18–20%, sheep 60–62% and pigs by 45–50%. The state farms have the task of increasing the milk yield to 2,100–3,900 kg. per cow, according to the potentialities of herds. Fodder production is to be raised by 45–55%.

A sufficient number of new adequately equipped and staffed veterinary institutions and clinics are contemplated. Plans are afoot for the irrigation of the steppes in the Don-Volga-Caspian-Aral sea area. Capital expenditure on agriculture will be about doubled.—F.A.A.

Minut, J. (1951). Gegenwärtiger Stand der Milchwirtschaft in Brasilien. I. Teil. Die Milchversorgung von Rio de Janeiro. II. Teil. Die Milchversorgung von Sao Paulo. [**Milk industry in Brazil. I. Milk supplies of Rio de Janeiro. II. Milk supplies of São Paulo.**]—*Milchwissenschaft.* **6,** 10-12 & 43-46. [English summary.] **1380**

TB. and brucellosis are common in cattle in Rio de Janeiro. Tuberculin testing and BCG vaccination are practised. Milk is examined microscopically and macroscopically by the "Division for Inspection of Products of Animal Origin". Distribution, consumption, and prices of milk are described.

São Paulo has 3 classes of milk 'A', 'B' and 'C'. 'A' is bottled immediately after milking and is distributed within 12 hours; 'B' is pasteurized within 4 hours and distributed within 18 hours; 'C' is cooled within 6 hours, pasteurized within 18 hours, and distributed within 24 hours after pasteurization. Chemical and bacteriological tests are described, and the prices are given.—W. R. Bett.

See also absts. **1124** (control of industrial anthrax); **1138** (TB. in man and animals); **1268-1271** (Q fever); **1280** (excretion of benzene hexachloride in milk); **1284** (inspection of livers infested with *D. lanceolatum*); **1427-1428** (reports, India); **1432** (book, food hygiene).

REPRODUCTION AND REPRODUCTIVE DISORDERS

Bonadonna, T. (1950). Osservazioni sulla fecondità per fecondazione artificiale in rapporto alla stagione dell'anno. [**Fertility obtained by artificial insemination in relation to the season of the year.**]—*Zootec. Vet., Milan.* **5,** 772-779. [English conclusions.] **1381**

Studies on 4,780 dairy cows artificially inseminated in Lombardy revealed a decrease in fertility during the coldest and warmest seasons. These findings agreed with those in cows naturally served. Seasonal variations in the staining features of bull spermatozoa were also noted.

—L. Badiali.

Letard, E., Szumowski, P., Parez, M., Pagot, M., Derbal, Z., Ballis, J. & Souquet, J. (1951-52). Des possibilités d'emploi du sperme de taureau transporté de France pour l'insémination artificielle dans les territoires d'outre-mer. [**Export of bull semen from France to colonial territories.**]—*Rev. Élev.* **5,** 115-130. **1382**

Some proposals for the most efficient use of bull semen exported from France to the colonial territories. Since the tropical cattle have short and scarcely discernible heat periods the authors suggested the building of small farms to accom-

modate about 200 non-pregnant cows for observation. Such farms would receive semen twice every week direct by air so that a constant fresh supply would be available. Induction of heat by hormone treatment was advocated for cows in which natural heat is particularly hard to detect.—A.S.

BRANTON, C., D'ARENSBOURG, G. & JOHNSTON, J. E. (1952). **Semen production, fructose content of semen and fertility of dairy bulls as related to sexual excitement.**—*J. Dairy Sci.* **35**, 801-807. [Abst. from authors' summary.] **1383**

Experiments in which bulls were allowed to mount and ejaculate without interference, when compared with others in which ejaculation was postponed by one or more false mounts, revealed that it is possible to relate the quality of the semen—in terms of fructose concentration and fertility—with the degree of excitement preceding ejaculation. There appeared to be an inverse relationship between the concentration of fructose and the spermatozoan density of semen. Results indicated that one false mount may be recommended for routine practice in bull studs.

GASSNER, F. X., RUTHERFORD, E. R., HOPWOOD, M. L. & HILL, H. J. (1952). **Effect of castration and steroid therapy on seminal plasma with respect to fructose utilization by normal bull sperm.**—*Proc. Soc. exp. Biol., N.Y.* **81**, 43-49. [Authors' summary modified.] **1384**

Methods of characterization and estimation by paper partition chromatography of carbohydrates and free amino acids in semen and accessory sex organ fluids of the bull were described. Fructose was the only sugar found in semen and in fluids expressed from the accessory sex glands. The measurement by paper chromatography agreed well with the results of chemical methods.

LIKAR, I. & BIBIĆ, Ć. (1951). Spermiogram pastuha. **[Spermiogram of stallions.]**—*Veterinaria, Sarajevo.* **1**, 3-15. [In Croat. Abst. from English summary.] **1385**

The authors described a method for the microscopic analysis of the semen of stallions, from which conclusions may be drawn relating to the health of the testicles, the vas deferens and the accessory glands.

WEISS, K. (1952). Spermaverdünnung mit Milch. **[Milk as a semen diluent.]**—*Wien. tierärztl. Mschr.* **39**, 668-672. **1386**

2 ml. of yolk of egg with 100 ml. of milk and 10 drops of 10% streptomycin solution was found to be an effective diluent for semen.

—R. MARSHALL.

BROCHART, M. & COULOMB, J. (1952). Recherches sur la dilution et la conservation du sperme de chien. **[Dilution and storage of the semen of the dog.]**—*Bull. Acad. vét. Fr.* **25**, 59-62. **1387**

Dilution of dog semen with citrated egg yolk solution or fructose egg yolk solution increases its keeping qualities up to 4 days.

—J.D.

PACE, D. M., MORAVEC, D. F. & MUSSEHL, F. E. (1952). **Physiological characteristics of turkey semen. I. Effect of type of diluent and degree of dilution on duration of motility in turkey spermatozoa.**—*Poult. Sci.* **31**, 577-580. [Authors' summary modified.] **1388**

The fructose concentration in various samples of freshly collected turkey semen was found to be approx. 60 mg.%. The spermatozoa live longer *in vitro* when fructose is added to the diluent, but, in the semen-diluent solution, they soon settle to the bottom, clump and die, unless agitated gently. Turkey sperm *in vitro* live longer in diluted than in undiluted samples.

MELROSE, D. R. & TERNER, C. (1952). **Pyruvate metabolism and assessment of semen quality.**—*Proc. Soc. exp. Biol., N.Y.* **80**, 298-300. [Authors' summary slightly modified.] **1389**

Bull spermatozoa were graded according to their metabolic behaviour on incubation with pyruvate, fluoride and 2:4-dinitrophenol. A correlation was found between the type of response of the samples *in vitro* and the fertility of the donors in the artificial insemination of cattle.

VANDEMARK, N. L. & HAYS, R. L. (1952). **Uterine motility responses to mating** [in cows.]—*Amer. J. Physiol.* **170**, 518-521. [Authors' summary modified.] **1390**

By placing in the uteri of cows a water-filled balloon connected to a diaphragm and ink-writing lever, kymograph records were made showing uterine responses to mating. The presence of the bull, nuzzling by the bull, non-copulatory mounting, and mounting followed by coitus and ejaculation all served as stimuli which resulted in increased uterine tone and uterine contractions within a few sec. Coitus produced the greatest uterine response, which was characterized by tetanic contractions. The uteri of both oestrous and post-oestrous cows responded similarly to the various stimuli

associated with coitus. The authors suggested that uterine activity evoked by mating plays a role in the rapid transport of spermatozoa in the cow.

BOSTICCO, A. (1950). Contributo alla conoscenza della composizione e del significato funzionale del secreto mucoso cervicale delle bovine in calore. **[Composition and function of the cervical mucus of cows in oestrus.]**—*Zootec. Vet., Milan.* **5,** 668-673 & 824-830. **1391**

Composition and functional importance of the oestral mucous secretion in cows were discussed, with special reference to the fertility rate. Growth factors appear to be sometimes present in oestral mucus; they increased the production of cork in suitably treated potato tubers and hastened the germination of seeds.

—M. BERTANI.

SAN MARTIN, F. M. (1951). Algunos aspectos experimentales sobre la actividad reproductiva. **[An experimental study of the physiology of reproduction.]**—*Rev. Fac. Med. vet., Lima.* **6,** 95-144. **1392**

Experiments showing the effects of various hormones on follicular growth, ovulation, and early embryonic development in the rabbit. The length of active life of both ova and spermatozoa was also established.—A.S.

I. DAUZIER, L. & WINTENBERGER, S. (1952). Recherches sur la fécondation chez les mammifères. Durée du pouvoir fécondant des spermatozoïdes de bélier dans le tractus génital de la brebis et durée de la période de fécondité de l'oeuf après l'ovulation. **[Duration of fertilizing activity of spermatozoa in the genital tract of the ewe.]**—*C. R. Soc. Biol., Paris.* **146,** 660-663. **1393**

II. DAUZIER, L. & WINTENBERGER, S. (1952). Recherches sur la fécondation chez les mammifères: La remontée des spermatozoïdes dans le tractus génital de la brebis en dioestrus et anoestrus. **[Movement of spermatozoa in the genital tract of the ewe during oestrus and anoestrus.]**—*Ibid.* 663-665. **1394**

I. It is possible to induce ovulation in ewes at a predetermined time by the i/v inj. of gonadotrophic hormone at the onset of heat. The authors studied 55 ewes, each of which was served at a recorded time before or after ovulation. After slaughter the ova were recovered, stained, and examined to see whether they had been fertilized. Their findings from this examination, together with the study of spermatozoal scrapings from the genital tract, enabled the authors to set the fertile life of an ovum at roughly 15 hours, and that of spermatozoa at 78 hours at the most. Resorption of the spermatozoa was complete 84 hours after service.

II. Experiments showed that, contrary to some previous assertions by other authors, the movement of spermatozoa in the genital tract of the ewe when not on heat is very slow, and the time of survival relatively short, being limited to about 16 hours.—A.S.

MCDONALD, L. E., NICHOLS, R. E. & MCNUTT, S. H. (1952). **Studies on corpus luteum ablation and progesterone replacement therapy during pregnancy in the cow.**—*Amer. J. vet. Res.* **13,** 446-451. [Abst. from authors' summary.] **1395**

Five cows in which the corpora lutea were removed between the 92nd and 163rd day of pregnancy aborted promptly, but pregnancy was maintained by the inj. of progesterone in 8 of 9 cows in which the corpora lutea were removed at approx. the 60th day of pregnancy. The mean length of gestation of these cows was short and the placenta was retained in 7.

Intramuscular inj. of 100 mg. crystalline progesterone in sesame oil daily, maintained pregnancy in a high percentage of the experimental cows. In cows in which the corpora lutea had been removed, abortion did not occur when progesterone injections were discontinued as early as the 162nd day of pregnancy.

BRADEN, A. W. H. (1952). **Properties of the membranes of rat and rabbit eggs.**—*Aust. J. sci. Res.* Ser. B. **5,** 460-471. **1396**

The egg membranes — zona pellucida, cumulus oophorus, and, in the rabbit, the "albumen" layer—are shown to contain a large proportion of polysaccharide and some protein. The zona is a less acidic mucoprotein, and the "albumen" layer a more acidic, than the matrix of the cumulus, which contains hyaluronic acid. The rat zona is dissolved in aqueous solutions at pH 5 or less, and the rabbit zona at pH 3 or less; both are taken into solution by a variety of oxidizing and reducing agents, of which the most effective is H_2O_2. The "albumen" layer can be detected on the rabbit's egg as early as 6–8 hours after ovulation.—C. R. AUSTIN.

KNAKE, E. (1951). Beitrag zur Wirkungsweise von Oestradiol. **[The action of oestradiol.]**—*Virchows Arch.* **319,** 547-550. **1397**

Experiments demonstrating the effects of oestradiol and oestrogen on young normal rats and castrated rats indicated that the action of oestradiol was probably due, not to that sub-

stance itself, but to oestrogen produced from it by chemical action within the body.—A.S.

AEHNELT, E. (1952). Gutachten über einen Jungbullen mit Aspermie nach Hyperkeratose der Haut. **[Aspermia and hyperkeratosis in a bull.]**—*Fortpfl. Besamung Haustiere.* **2,** 47-48. Published in *Deutsche tierärztliche Wochenschrift.* **59,** Nos. 23-24. **1398**

A description of a bull in which a general hyperkeratosis of the skin, probably the result of an incorrectly applied disinfectant wash, was thought to have affected the generative epithelium of the testes. The semen contained no spermatozoa but numerous epithelial cells: *Pseudomonas pyocyanea* though present in quantity, was not considered the cause of aspermatism.—A.S.

LESBOUYRIES, G. & DRIEUX, H. (1952). Freemartinisme. **[Freemartins.]**—*Rec. Méd. vét.* **128, 737-759.** **1399**

The authors drew attention to a current carelessness in the use of the term 'freemartin'. The term, they emphasized, was to be used only for such female calves as had been rendered sterile by the precocious influence of male hormone from a male twin.

They gave a detailed description of the manner in which the male hormone suppressed the development of ovaries and uterus in the female, while leading to a pronounced development of the vestigial Wolffian ducts.—A.S.

WAYMAN, O. & ASDELL, S. A. (1952). **Studies in the physiology of bovine nymphomania.** —*Cornell Vet.* **42,** 296-303. [Authors' summary copied *verbatim.*] **1400**

A series of six cows with typical symptoms of nymphomania were compared with normal, spayed, and stilbestrol-implanted cows. Hemoglobin, plasma calcium, and inorganic phosphorus were the same in all groups. In the nymphomaniacs plasma protein was high, especially in the gamma and beta globulin fractions. The stilbestrol-treated cows did not show this symptom until the ovaries had become cystic. Ingrowths of inverted adrenal cortex invaded the medulla in the affected cows. Myometrial activity was irregular, with a marked lack of spontaneous motility. Reactions to epinephrine were irregular. The picture does not resemble that of estrogenic stimulation.

LAWRENCE, J. & MEISELS, R. (1952). **A lateral canine hermaphrodite.**—*J. Amer. vet. Med. Ass.* **121,** 171-172. **1401**

The subject, a black Cocker spaniel, showed an enlarged clitoris, oestrus without discharge and attracted male dogs. It was in poor flesh, although in good health, and had no history of viciousness. The two gonads, the uterine horns and part of the body were removed and sectioned. The left gonad was an atrophic, immature testicle; the right consisted of ovarian tissue, and hyperplasia of the uterine endometrium was also evident.—B. G. CLARKE.

HIGNETT, S. L. & HIGNETT, P. G. (1952). **The influence of nutrition on reproductive efficiency in cattle. II. The effect of the phosphorus intake on ovarian activity and fertility of heifers.**—*Vet. Rec.* **64,** 203-206. [Authors' summary modified.] **1402**

The authors reported observations on reproduction in 23 housed heifers maintained at 8 different phosphorus intake levels, other food constituents remaining constant. For satisfactory fertility in such housed heifers a minimum daily P_2O_5 intake of approximately 50 g. appears to be necessary. At different phosphorus intake levels various types of ovarian dysfunction, previously regarded as separate entities, became manifest.

LAMMING, G. E. & SALISBURY, G. W. (1952). **The effect of incipient vitamin A deficiency on reproduction in mammals.**—*Proc. VIth int. Congr. anim. Husb., Copenhagen,* 1952. **3,** 101-106. [In English. French, German and Danish summaries. Authors' summary modified.] **1403**

The authors discussed the possible incidence of incipient or subclinical vitamin A deficiency in cattle. They suggested that such a condition may be the cause of reported reproductive abnormalities in cattle during the late winter. A review of work on incipient vitamin A deficiency in female rabbits showed that it inhibited oestrus, decreased conception rate, promoted abortions and resulted in ovum degeneration and embryonic mortality.

Study of the cause of the syndrome in the pregnant rabbit suggested that vitamin A may be concerned with the synthesis of steroid hormones, particularly progestins. Comparisons were made between the syndrome of incipient vitamin A deficiency in the female rabbit and reproductive disturbances in undernourished cattle during the winter.

HUDSON, C. B. & PINO, J. A. (1952). **Physiological disturbance of the reproductive system in White Leghorn cockerels following the feeding of enheptin.**—*Poult. Sci.* **31,** 1017-1022. [Abst. from authors' summary.] **1404**

The feeding of enheptin (2-amino, 5-nitrothiazole) to 12-week-old White Leghorn

cockerels at a therapeutic level of 0·1% of feed by wt. for 2 weeks, followed by 0·05% for one week reduced appetite and retarded the growth rate. The size of the testes was reduced and spermatogenic activity completely inhibited. The comb and wattles were undeveloped and like those of castrated birds. The possible mode of action of enheptin was discussed.

BLOM, E. & CHRISTENSEN, N. O. (1952). Eine neue vererbbare Missbildung der Geschlechtsorgane bei Bullen (Aplasia segmentalis ductus Wolffi). **[Hereditary genital malformation in bulls involving the organs developing from the Wolffian duct.]**—*Wien. tierärztl. Mschr.* **39,** 340-344. [English, French and Italian summaries.] **1405**

The authors described hereditary malformation of the genital organs developing from the Wolffian duct in the bull. Such malformation or underdevelopment may be clinically detectable in a shortening of one or both sides of the scrotum or in the absence of the outline of the cauda epididymis. Bulls with these symptoms should not be used for breeding.—A.S.

SAUNDERS, L. Z., SWEET, J. D., MARTIN, S. M., FOX, F. H. & FINCHER, M. G. (1952). **Hereditary congenital ataxia in Jersey calves.** —*Cornell Vet.* **42,** 559-591. [Authors' summary modified.] **1406**

Twenty-three calves showing nervous symptoms were born in a purebred Jersey herd over a 15-year period. The symptoms were those of inco-ordination or ataxia—a failure of synergic muscle groups to act harmoniously. The symptoms were present at birth in some of the calves and appeared during the first week or two of life in the others.

Both sexes were affected. Evidence is presented to support the hypothesis that the disease is hereditary and an autosomal recessive mode of inheritance is postulated. The herd was assembled in 1924, and no outside stock has been added since that time. The birth of calves with ataxia ceased in 1948, when two bulls, suspected of carrying the defect, were removed from the herd.

The anatomical basis for the symptoms was an anomaly of the cerebellum and midbrain, resulting from a lack of development of the nerve cells, axon cylinders, myelin sheaths, and oligodendroglia in these regions. The lesion was most striking in the white matter of the cerebellum, which presented a reticulated, spongy appearance microscopically. The condition was interpreted as an aplasia rather than a degeneration.

BLIN, P.-C. & OVEJERO DEL AGUA, F. (1952). Ectromélie double et totale chez la chèvre. **[Ectromelia in the goat.]**—*Rec. Méd. vét.* **128,** 374-381. **1407**

A detailed anatomical report on a case of ectromelia in a goat. The animal had lived for nearly a year.—J.D.

HANCOCK, J. (1952). **Identical cattle twins and colour inheritance.** — *Endeavour.* **11,** 78-86. **1408**

In the course of the twin collection work during the last years at Ruakura Animal Research Station, New Zealand, nearly one thousand like-sexed sets of twins have been examined. Of these, nearly 300 sets have been judged to be monozygotic. H. examined the usefulness of various hair and skin colours as criteria. It appears that most of the variations of coat and skin colours in cattle are due to genetical differences. Very numerous patterns can be evolved, especially in cattle of the Jersey breed: it would be difficult if not impossible to find a finite population of Jersey cattle with exactly the same pattern. It is therefore not surprising that over 90% of the dizygotic twins examined at Ruakura can be distinguished by differences in hair and skin colour alone, even when the examination is made at birth when colour effects are poorly developed.

Observations of monozygotic twins at Ruakura have made it possible to postulate at least two new factors, b_e and P_b affecting coat and skin colours in cattle. The factor b_e which causes black hair on the inside fringe of the ears in conjunction with B_s is essentially a skin pattern factor. The factor P_b is a skin spotting factor which produces either black or brown spots or both, according to the genetic composition of the animals.—D. S. RABAGLIATI.

See also abst. **1120** (*V. fetus* infection).

ZOOTECHNY

CUBA CAPARÓ, A. (1951). Policitemia y mal de montaña en corderos. **[Altitude disease in sheep.]**—*Rev. Fac. Med. vet., Lima.* **6,** 5-94. [English summary.] **1409**

A study of 20 lambs born and reared more than 4,000 metres above sea level. Their different responses to this high altitude led the author to arrange them in three groups:—I.—of 3 'normal' animals, having a haematological make-up like that of lambs at sea level; II.—

8 with moderate polycythaemia and atrophy of the thymus; III.—4 having likewise no clinical symptoms, but with more severe polycythaemia, hypertrophy of the heart, liver, lungs and kidneys, and atrophy of the spleen in two cases; IV.—5 with clinically detectable mountain sickness. These were clearly polycythaemic, with a very high haemoglobin level. There was fluid in the abdominal and thoracic cavities, overdevelopment of the right auricle and left ventricle, atrophy of the thymus and spleen, and increase in the weight of the lungs. Groups III and IV had a markedly higher total volume of blood.—A.S.

KLETTE, H. & HUEBER, S. (1951). Mast- und Kastrationsversuche bei Schweinen mit Diacetat des (*p*-Oxyphenyl)-hexadiens. **[Hormonal castration and fattening experiments in pigs with diacetate of (*p*-oxyphenyl)-hexadiene.]** —*Tierärztl. Umsch.* **6**, 56-59. **1410**

Subcutaneous inj. of this hormone caused temporary castration of female and male pigs and resulting improvement in wt. gains. Higher dosage was required for males than for females. —R. MARSHALL.

MORNET, P. (1951). Le cornage des bovins d'Afrique occidentale française. **[The types of horns in cattle of French West Africa.]**—*Bull. Serv. Élev. Industr. anim. A.O.F.* **4**, Nos. 2-3. pp. 27-37. **1411**

Cattle are classified as to whether they are polled, have movable horns or have hypertrophied horns. The geographical distribution of these types was examined together with some of the reasons advanced for the difference in these structures.—R. N. SMITH.

See also abst. **1269** (milking and transmission of Q fever).

TECHNIQUE AND APPARATUS

TURNER-GRAFF, R. (1952). **An effective use of Petri dishes for microcultures.**—*J. gen. Microbiol.* **7**, 31-35. [Author's summary copied *verbatim.*] **1412**

A microtechnique has been developed for the growth of many cultures in one Petri dish. The agar substrate is in the form of small plaques pipetted so that each plaque is distinct and separate from its neighbour in the Petri dish. The method is used for the assay of antifungal materials and has been adapted to the isolation and biochemical characterization of micro-organisms. Work is in progress to adapt the procedure to yeast and bacterial counts.

SZENT IVÁNYI, T. (1951). Über einen Spezialnährboden zur Züchtung von Rotlaufstäbchen und Galtstreptokokken. **[A culture medium for *Erysipelothrix rhusiopathiae* and *Streptococcus agalactiae.*]**—*Acta vet. hung.* **1**, 229-238. [In German. Russian summary.] **1413**

The author prepared a peptone broth and an agar medium which, after the addition of crystal violet (1:200,000) and sodium azide (1:5,000) proved to be good for *E. rhusiopathiae* and *Str. agalactiae,* while suppressing the saprophytes which frequently invade their cultures. These media were especially useful where diagnosis depended on the isolation of these bacilli from milk or diseased organs.—A.S.

WADE, H. W. (1952). **Demonstration of acid-fast bacilli in tissue sections.**—*Amer. J. Path.* **28**, 157-170. [Author's summary copied *verbatim.*] **1414**

The carbowax method of sectioning tissues, which involves no harmful sequence of reagents either in the embedding process or in dewaxing the sections, has been found eminently satisfactory for the demonstration of leprosy bacilli in lesions.

The carbowax method involves certain peculiar problems and has not yet been fully standardized. Having in view the essential features, a practicable technic has been worked out. Without special treatment, carbowax sections have usually given decidedly better results with carbol-fuchsin staining than have comparable paraffin sections, and the results of the restorative procedures have been still better in comparison.

Whether or not this method will be equally superior for the demonstration of tubercle bacilli in lesions has yet to be determined. Also to be determined is the possible value of the method for the study of intracellular lipids in the lesions of leprosy.

POMALES-LEBRÓN, A. & FERNÁNDEZ, C. (1952). **A method for estimating the number of bacteria in liquids and tissues.**—*J. Bact.* **64**, 837-839. [Abst. from authors' summary.] **1415**

Measured amounts of appropriate dilutions of the material being investigated are deposited on the surface of an agar medium. The liquid is absorbed readily into the agar and the bacteria are deposited on the surface. After a suitable period of incubation the colonies are counted and calculations made.

This method may find practical application in the estimation of the number of bacteria in blood, faeces, urine, milk etc.

PIJPER, A. (1952). **Dimensional differentiation, filtration and separation of bacteria.**—*J. Path. Bact.* **64,** 529-538. [Abst. from author's summary.] **1416**

The appearance of spectral colours in surface cultures of bacteria has often been noticed, though the phenomenon has not been closely studied: P. found that the colours are produced through diffraction and that the phenomenon can be used for assessing the thickness of certain cocci and bacilli. Sometimes it may be used for the quick differentiation of pathogenic and non-pathogenic species of certain groups of bacteria, and antigenic content may affect the phenomenon.

A physical method of separating bacteria makes use of the different height to which bacteria will climb in strips of filter paper which have been dipped in bacterial suspensions. It was found that the bacteria which had been demonstrated by the diffraction method as being the thinnest, climb highest.

MULES, M. W. (1952). **A technique for the collection of samples of uncontaminated faeces from sheep.**—*Aust. vet. J.* **28,** 126. **1417**

The instrument used was illustrated; it consists of a tube of "pyrex" glass 15·5 cm. long, sealed at one end, with an inner diam. of 19·0 mm., a tube wall thickness of 1·0 mm. and having an oval orifice near the sealed end measuring 26·0 × 15·0 mm. The sealed end is drawn out in a flame and moulded into an obtuse point. The orifice is cut with an emery wheel and is not more than 2 cm. from the sealed tip. The space between the orifice and tip is filled with wax, run in after several small spears of glass have been fused into the space to provide a framework. The wax is then moulded with a sloping smooth surface. The tube is corked and after moistening with glass-distilled water is inserted into the rectum with a continuous semi-rotary motion. Pelleted faeces roll down into the tube and may be recovered by uncorking.—H. McL. GORDON.

THOMAS, R. M. & PRIER, J. E. (1952). **An improved lyophilizer.**—*Science.* **116,** 96. **1418**

This consists essentially of a metal Dewar flask with 24 metal nipples welded to the side for attaching the vials. The vacuum exhaust pipe is attached to the inside of the condenser pipe. The whole stands in the centre of a circular trough. Ethyl alcohol or a 50% ethylene glycol-water mixture is used as a carrier in the condenser chamber with a dry ice refrigerant. The trough contains ethylene glycol when the instrument is being used.—L. M. MARKSON.

KAUTZKY, R. (1951). Die Schnelldiagnose intrakranialer Erkrankungen mit Hilfe des supravital gefärbten Quetschpräparates. [**Rapid diagnosis of intracranial diseases with the aid of supravitally stained crush preparations.**]—*Virchows Arch.* **320,** 495-550. **1419**

The supravital staining of tissues from the brain, using such stains as Janus green, neutral red, and methylene blue, without previous fixation or drying, provided a convenient method for the rapid recognition of disease tissues. The technique was particularly suited to the diagnosis of tumours.—A.S.

FEYRTER, F. (1951). Zur Normung der Silberimprägnation neuraler und nichtneuraler Gewebe. [**Standardization of silver impregnation of nervous and other tissues.**]—*Virchows Arch.* **320,** 551-563. **1420**

A description of a standardized technique of silver impregnation which proved useful in the staining of human nervous tissue.—A.S.

BEHRENS, H. & BARTELS, G. (1951). Beitrag zur Glykolyse im Liquor cerebrospinalis des Pferdes. [**Glycolysis in the cerebrospinal fluid of the horse.**]—*Mh. Vet.-med.* **6,** 418-423. **1421**

Cerebrospinal fluid kept for 5–8 days at room temp. or 11–24 days in the cold is useless for sugar estimations because of glycolysis, presumably due to bacterial enzymes. Centrifuging has no effect on glycolysis, but the addition of 1% sodium fluoride enables samples to be kept for 30 or, in the cold, 50 days.—N. DEAN.

CHAPLIN, H., JR. & MOLLISON, P. L. (1953). **Improved storage of red cells at −20°C.**—*Lancet.* **264,** 215-218. [Authors' summary copied *verbatim.*] **1422**

Red cells mixed with a glycerol-citrate solution to provide a final concentration of 30% glycerol and 3% trisodium citrate undergo only very slow haemolysis when stored at −20°C. After 3 months' storage, 98% of the cells remain unhaemolysed, and it seems probable that about 90% of the cells will still be intact at the end of a year. Although this method of storage seems certain to be useful in laboratory work, its value in blood-transfusion has yet to be proved.

See also absts. **1121** (cultivation of *V. fetus*); **1142** (acid-fast bacilli, cultivation and diagnosis); **1162** (serological identification of salmonella cultures); **1167** (conjunctival test in brucellosis); **1199** (Gram stain reversal); **1228-1229** (electron microscopy of Aujeszky virus); **1232** (electron microscopy of fixed rabies virus).

REPORTS

AUSTRALIA. (1949). **Livestock Health Report No. 25. [New South Wales] recording the incidence of disease in stock and the research work accomplished during the year ended 30th June, 1949.** [HINDMARSH, W. L.] pp. 27. Dept. of Agric., New South Wales. **1423**

Seasonal and pastoral conditions are noted and there are figures for records of tuberculin tests,incidence of BRUCELLOSIS, ANTHRAX, ectoparasites (ked, lice, *Psorergates ovis* in sheep and cattle tick), and for swine compensation and border crossings from Queensland (cattle tick control).

Diseases noted briefly are BLACKLEG, MASTITIS in cattle, OPHTHALMIA in sheep and cattle, ENTERIC INFECTIONS in calves, BOVINE TRICHOMONIASIS (sexual rest and intra-uterine injections of iodine proved useful), JOHNE'S DISEASE, SWINE DYSENTERY (organic arsenicals and sulphamerazine were effective), PULLORUM DISEASE (tested flock scheme began), SPIROCHAETOSIS in fowls (vaccination continued to be useful), CONTAGIOUS PUSTULAR DERMATITIS (vaccination was carried out extensively), MINERAL DEFICIENCY in cattle in coastal regions and external parasites of sheep.

There are notes on cattle tick control with details of types of treatments in the regions in the infested part of New South Wales.

Research work dealt with BOVINE MASTITIS, particularly the epidemiology of the causal organisms. Penicillin treatment must be supported by better hygienic conditions if re-infection is to be prevented. A survey of SWINE ERYSIPELAS indicates that the causal organism is a soil saprophyte which under certain conditions becomes pathogenic. The chronically infected pig does not appear to be a menace as a carrier. OMPHALITIS in chickens decreased and although a specific organism was not isolated it appears to enter the egg in its passage down the oviduct.

PEROSIS in turkeys continued to be important, but provision of additional choline gave promising results. BENT LEG in lambs was widespread and the aetiology remains obscure. Breeding trials with affected rams and ewes are planned.

ATAXIA in sheep in the near north-western regions appears after 2–3 years' grazing on pastures containing *Tribulus terrestris;* photosensitization has not been observed in sheep in the regions where ataxia is seen. In affected sheep there is slow progressive degeneration of the cord in the lumbar region.

Co-operative investigations with the Commonwealth Scientific and Industrial Research Organization include drought feeding trials, TOXAEMIC JAUNDICE and deferred grazing. TOXAEMIC JAUNDICE investigations showed that the plant *Heliotropium europaeum* is responsible for the greater part of the losses among cross-bred ewes in the Murray Valley. An alkaloid, lasiocarpine, has been identified. Ingestion of the plant causes a megalocytosis in the liver with progressive effects from year to year. HELIOTROPE POISONING is differentiated from acute copper poisoning by the absence of haemoglobinaemia and haemoglobinuria.

At the Poultry Experiment Farm investigations included toxicity of weed seeds in grain, soya bean as green feed, oats as grain, ground limestone and limestone chips, and genetics.

Other activities were artificial insemination, progeny testing of Merino rams, control of BLOWFLY STRIKE, breeding of hornless Dorset Horn sheep, sheep nutrition in the New England region.—H. McL. GORDON.

AUSTRALIA. NORTHERN TERRITORY. (1952). **Sixth annual report, 1951-1952, (covering activities for year ending 30/6/1952), Animal Industry Branch, Northern Territory Administration.** [ROSE, A. L.] pp. 31. Alice Springs. (Mimeographed.) **1424**

BOVINE CONTAGIOUS PLEURO-PNEUMONIA continues to be a serious problem. Vaccination of cattle before travelling into Queensland or South Australia is essential if outbreaks are to be prevented. Vaccination is often carried out inefficiently unless supervised by trained staff.

A survey of the incidence of *Boophilus microplus* was continued and new dipping facilities are being provided. Ticks persisted in some newly invaded regions in spite of drought.

KIMBERLEY HORSE DISEASE was shown to be caused by ingestion of *Crotalaria retusa.* GEORGINA RIVER DISEASE (Georgina poisoning) of sheep and cattle was due to ingestion of the seeds of *Acacia georginae* and not to *Eremophila latrobei* as previously thought.

Feeding horses with seed pods of *Atalaya hemiglauca* produced severe locomotory disturbances in seven days. Profound liver damage was found in a horse fed smaller amounts of the seeds over a longer period. Cattle did not show these effects.—H. McL. GORDON.

AUSTRALIA. SOUTH AUSTRALIA. (1951). **The Institute of Medical and Veterinary Science. Thirteenth Annual Report of the Council, July 1950-June 1951. [Veterinary Pathology**

Section: WATTS, P. S.] pp. 49. Adelaide: The Institute. **1425**

Several methods of testing milk for the detection of MASTITIS are under examination. Animal inoculation of milk is used in a survey of the incidence of BRUCELLOSIS in addition to serological tests of bulked milk. The "ring test" was more sensitive than the whey agglutination test. Human cases of BRUCELLOSIS have been followed up by milk tests and serum agglutination tests on cows supplying the milk and by g. pig inoculation with milk from positive reactors.

Observations on STAGGERS due to ingestion of *Lolium perenne* are directed towards determining the possible role of "minor" elements. Results of a preliminary trial suggested that top-dressing with a mixture of copper, cobalt, manganese, zinc, boron and molybdenum prevented the disease.

Neutralization tests in developing eggs showed that INFECTIOUS LARYNGOTRACHEITIS of fowls is widespread in South Australia, 48% of flocks giving positive results.

Outbreaks of SALMONELLOSIS (*S. typhimurium*) in sheep were investigated and water in troughs was found to be infected. Magpies and some other birds and foxes gave positive cultures. A magpie shed *S. typhi-murium* in faeces for 21 days and the organism was recovered from artificially contaminated soil and faeces up to 40 days in winter. Attempts to demonstrate the carrier state in sheep or birds gave negative results.

An outbreak of ST. GEORGE DISEASE [*V.B.* **18,** 1829], hitherto only recorded in Queensland, occurred in cattle following rain after drought. Liver necrosis was present and riboflavin and thiamine levels were low. Histological changes resembled those seen in disturbances of cystine metabolism.

Other items given brief mention are toxic properties of *Oxalis cernua* and *Phalaris tuberosa* (detailed neuro-histological study of the extensive demyelination lesions), equine pregnancy tests, EQUINE MYOHAEMOGLOBINAEMIA, avian type TB. in a hawk, SWINE ERYSIPELAS, *Erysipelothrix monocytogenes* infection in sheep, ALOPECIA in Rhesus monkeys, and buccal infection in kangaroos.—H. McL. GORDON.

UNION OF SOUTH AFRICA. (1951). **The South African Institute for Medical Research, Johannesburg. Annual Report for the year 1951.** [CLUVER, E. H.] pp. 100. Johannesburg: The South African Institute for Medical Research. **1426**

In a further investigation of the antitoxin content of milk, MASON, J. H. confirmed that while plasma from a horse and a cow hyperimmunized with *Cl. welchii* antitoxin contains increased γ-globulin, the cow's milk had a low antibody content.

Urinary excretion of arsenic by horses was rapid for the first 5 days and then decreased; arsenic was not detected after 26 days. Barbiturates were detected in the saliva and urine of horses by absorption spectrophotometry.

Plague bacilli have been isolated from infected animal carcasses preserved in dry common salt for 67 days at 20°C. Home-born S. Africans are largely immune to Q FEVER, but recent European immigrants have contracted it from cattle contacts. With increasing urbanisation, increase of the disease is anticipated.

Five human cases of RIFT VALLEY FEVER occurred 5 days after they had conducted a P.M. examination of a bull. The virus was isolated from the blood of one patient and from the liver of the bull. Cases of RIFT VALLEY FEVER also occurred from contact with infected sheep.—S. E. FOX.

INDIA, ASSAM. (1952). **Annual report of the Civil Veterinary Department for the year 1949-1950.** [MEHRA, G. K.] pp. 30. Shillong: Assam Government Press. 1s. 4d. **1427**

In spite of a shortage of technical personnel, the department made steady progress in the efficient control of rinderpest and the provision of adequate veterinary attention to livestock. The Assam Veterinary College had on its rolls 55 students. The total expenditure of the department was Rs. 628,854.—C. SEETHARAMAN.

INDIA. (1952). **Annual report of the Civil Veterinary Department, Punjab, for the year 1950-1951.** [AGGARWALA, A. C.] pp. 127. Simla: The Controller, Printing & Stationery, Punjab. **1428**

A detailed account was given of the various activities of the department, *viz.* livestock breeding, vet. education, control of contagious diseases, treatment of animals, poultry husbandry, dairy development etc. Besides 16 tables, 23 photographs of cattle, sheep, goats and poultry were included.

At the end of the year the Punjab Veterinary College had 67 students on its rolls and 40 students qualified for the B.V.Sc. degree. The technical personnel consisted of 35 gazetted and 387 non-gazetted officers. The total expenditure of the department was Rs. 3,522,110.

—C. SEETHARAMAN.

U.S.A. (1951). **Report of the Chief of the Bureau of Animal Industry, Agricultural Research Administration, United States Depart-**

ment of Agriculture, 1951. [SIMMS, B. T.] pp. 91. Washington, D.C.: Superintendent of Documents, U.S. Govt. Printing Office. 25 cents. 1429

Research on animal husbandry problems, on diseases and on parasites of livestock is summarized. In addition work on meat inspection, quarantine, control of the major infective diseases and on the control of production of serum and vaccines is described.

Experimental evidence suggested that a high silicate content of the food was associated with URINARY CALCULI formation in sheep. Aureomycin supplements in the feed of pigs protected the pigs against NECROTIC ENTERITIS. Egg quality is permanently reduced in hens recovered from NEWCASTLE DISEASE and also in pullets vaccinated against the disease after egg-laying has commenced. Resistance to CONTAGIOUS ABORTION in vaccinated cows is highest during the fourth and fifth pregnancies and least during the first pregnancy following a single inj. of Strain 19 vaccine.

The study of HYPERKERATOSIS of cattle carried on at many stations throughout the U.S.A. has led to a suggestion that possibly two different diseases, one of them infectious, may be involved.

Efforts are being made to develop a satisfactory complement-fixation test for ANAPLASMOSIS. Work on the preparation of more efficient types of johnin are continuing. The organisms of JOHNE'S DISEASE were shown to be very highly resistant to the action of disinfectants.

Studies of variant SWINE FEVER viruses were continued and an increase in the dosage of serum used in serum-virus immunization was recommended.

SWINE ERYSIPELAS organisms were isolated from 18 out of 285 samples of SWINE FEVER virus produced by commercial firms for use in SWINE FEVER immunization. SWINE ERYSIPELAS was consistently induced in pigs by infection of scarifications made on the skin; it is not stated whether the pigs used in these experiments had been previously immunized against SWINE FEVER.

Preliminary tests with a crystal violet NEWCASTLE DISEASE inactivated vaccine gave encouraging results.

A very severe outbreak of TOXOPLASMOSIS in chinchillas on a fur farm was investigated.

Cases of RABIES reported during the year were 4,979 in dogs, 948 in cattle, 33 in horses, 48 in sheep, 85 in pigs, 428 in cats, 5 in goats and 1,375 in other species of animals, mainly wild animals.

Tests were made of the toxicity for animals of plants sprayed with certain herbicides and also of a number of insecticides and high toxicity was demonstrated in some cases.

Transmission of PSOROPTIC MANGE mites from sheep to cattle was demonstrated.

In small-scale trials sulphone was found to be an effective anthelmintic for tapeworms (*Taenia taeniaeformis*) in cats and for other tapeworms in dogs. Toluene was found to be effective against hookworms and other nematodes in dogs and cats.—M.C.

BOOK REVIEWS

ANON. (1952). **Useful drugs. A selected list of essential drugs with brief discussions of their actions, uses and dosage. [Issued under the direction and supervision of the Council on Pharmacy and Chemistry of the American Medical Association.]** pp. xi + 262. Philadelphia: London: Montreal: J. B. Lippincott Company. 15th Edit. 20s. 1430

In this very conveniently-sized book a selection of drugs has been made from the 14th revision of the United States Pharmacopoeia, the 9th edition of the National Formulary and the 1950 edition of "New and Unofficial Remedies", the endeavour being to omit any article of dubious value. The chemical and physical properties, actions, uses and dosages (for man) of the selected drugs are given. The arrangement is alphabetical. In addition there is a short therapeutic index and a general index. A very useful book in which information is readily available. Although intended for medical practitioners there is much here of value to veterinarians.—M.C.

LIPPMAN, R. W. (1952). **Urine and the urinary sediment. A practical manual and atlas.** pp. xii + 124. Springfield, Ill.: Charles C. Thomas; Oxford: Blackwell Scientific Publications. 55s. 1431

Written for the clinician this book presents a collection of coloured photomicrographs of urinary sediments from a great variety of disease conditions in man, each having a descriptive caption. The photomicrographs are excellently reproduced and the colours very true to life. In addition the various elements seen in urinary sediments are described in the text with indications of their significance. There is also a section dealing with the technique of urine examination, both microscopic and chemical. The

binding, paper and production are all of high quality.—M.C.

HARVEY, W. C. & HILL, H. (1952). **Food hygiene.** pp. viii+511. London: H. K. Lewis & Co. Ltd. 35s. 1432

In a foreword the authors explain why a volume on Food Hygiene should deal in some detail with the manufacturing aspects of food products. This aspect they stress wherever possible throughout the book.

The authors have managed to pack an enormous amount of useful information into the thirty chapters which comprise the book. All aspects of our food supplies and even of our beverages are most carefully described, often at considerable length, but to the veterinarian the chapters on food poisoning, meat, meat products, milk production and distribution, heat treatment of milk, milk products, as well as those on butter and cheese, poultry and game make the greatest appeal.

Perhaps the weakest portion of the book is that dealing with matters of a veterinary interest and it seems unfortunate that the authors did not consult veterinary specialists more than they appear to have done. For instance, the opinion is expressed that there is no evidence to show that the employment of more veterinary surgeons for meat inspection would allow the work to be carried out more efficiently than it is at present by means of lay inspectors. The high standard of meat inspection in Scotland taken as a whole would appear to contradict this view.

The authors do not appear to be very conversant with the Diseases of Animals Acts and Orders, for when dealing with diseased conditions which may affect meat, it is stated that black-quarter, braxy, caseous lymphadenitis, malignant oedema and tetanus are notifiable diseases under the above Acts, whereas of course none of these is even scheduled.

Referring to tuberculosis amongst our herds, too little credit seems to have been given to the enormous improvement now being made in clearing tuberculosis from our cattle, for no mention at all is made of the "Attested Herds Scheme".

With a few exceptions the book is a mine of useful information. It is written in a free and most readable style and must greatly contribute to the better understanding of our food supplies.

—D. S. RABAGLIATI.

DE VRIES, L. [Professor of Modern Languages, Iowa State College.] (1952). **German-English medical dictionary.** pp. ix + 586. New York: Toronto: London: McGraw-Hill Book Company, Inc. $12.00. 102s. 1433

This dictionary has been compiled in collaboration with medical men and contains some 40,000 German words and phrases with their English equivalents. The genders of the German nouns are given.

The inclusion of so many medical and technical words in a volume of this size is made possible by sensibly excluding most of the common words in the language. The dictionary will prove to be very useful to all readers of medical literature who possess at least a fair knowledge of German.

The book is very clearly printed on good quality paper and has a durable, whole cloth binding.—E.V.L.

BOOKS RECEIVED

[Notice of recently received books in this list does not preclude review.]

BIRKHÄUSER, H. & BLOCH, H. (Edited by) (1952). Fortschritte der Tuberkuloseforschung. [**Advances in TB. research.**] Vol. V. pp. 370. Basle & New York: S. Karger Ltd. Swiss fr. 46.80.

DOERR, R. (1950-51). Die Immunitätsforschung. Ergebnisse und Probleme in Einzeldarstellungen. Band VI. (1950). Die Anaphylaxie. I; Band VII. (1951). Die Anaphylaxie II; Band VIII. (1951). Allergie. [**Immunological research. Results and problems. Vol. VI. Anaphylaxis. Part I; Vol. VII. Anaphylaxis. Part II. Immunological reaction and endogenous poisoning; Vol. VIII. Allergy.**] pp. 210, 102 and 214. Vienna: Springer-Verlag. Prices 51s. 6d.; 26s. 6d. and 50s. respectively.

HAUDUROY, P., EHRINGER, GUILLOT, G., MAGROU, PRÉVOT, A. R., ROSSET & URBAIN. (1953). Dictionnaire des bactéries pathogènes pour l'homme, les animaux et les plantes. [**Dictionary of bacteria pathogenic for human beings, animals and plants.**] pp. vi+692+[64]. Paris: Masson et Cie. 2nd Revised Edit. Fr. 1100.

MAXIMOW, A. A. & BLOOM, W. (1952). **A textbook of histology.** pp. x+616. Philadelphia & London: W. B. Saunders Company, Ltd. 6th Edit. 50s.

SHEPARD, W. P. (1952). **Essentials of public health.** pp. xxiii+581. Philadelphia, London & Montreal: J. B. Lippincott Company. 2nd Edit. 55s.

Printed in Great Britain by CHARLES BURRELL & SON, Chertsey, Surrey.

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List of Abbreviations

A.I. — artificial insemination
ant. — anterior
A.P.F. — animal protein factor
approx. — approximately
aq. — aqueous
av. — average

B.A.L. — British anti Lewisite (2,3 dimercaptopropanol)
b.p. — boiling point

c.f. — complement fixation
clin. — clinical
coeff. — coefficient
conc. — concentration
c.s.f. — cerebrospinal fluid

diam. — diameter
dil. — dilute(d)

E.I.A. — equine infectious anaemia
equiv. — equivalent

ft. — foot (feet) [measurement only]

Hb. — haemoglobin
H.I. — haemagglutination inhibition

inj. — injection(s)
insol. — insoluble
Inst. (inst) — Institute
i/m — intramuscular(ly)
i/p — intraperitoneal(ly)
i/v — intravenous(ly)
i/d — intradermal(ly)

lab. — laboratory (-ories)

max. — maximum (-al)

N.D.V. — Newcastle disease virus
N.D. — Newcastle disease

r.b.c. — red blood corpuscles
r.e.s. — reticuloendothelial system
R.H. — relative humidity

s/c — subcutaneous(ly)
soln. — solution
suppl. — supplement(s) (-ary)
std. — standard

temp. — temperature
therap. — therapeutic

U.V. — ultra-violet

vet. — veterinary
vol. — volume

w.b.c. — white blood corpuscles
wt. — weight

/ — per (*e.g.* wt./vol. m.g./lb. body wt.)

Bulletins on disease subjects written for farmers and "popular" articles of a similar nature are not included in the *Veterinary Bulletin*. Those of a sufficiently important nature are, however, included in *Index Veterinarius*; so also are certain review articles, presidential addresses, congress proceedings, etc., where the title conveys as much information as could be given in an abstract of a few lines. For information of this nature, readers of the *Veterinary Bulletin* are referred to *Index Veterinarius,* where titles of all publications indexed by the bureau are fully cross-referenced.

A list of annotations and reviews, classified according to subject, is now given in *Index Veterinarius,* being inserted at the end of each number. Such papers will not necessarily be dealt with in the *Veterinary Bulletin*.

The Editor will be glad to receive publications relating to Veterinary Science and cognate subjects in order that they may be dealt with in the *Veterinary Bulletin*.

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